water quality & environmental testing

wagtech

environmental technologists

Unicef estimate that over 80% of the worlds diseases are water born. Improved access to safe and affordable water supply and sanitation is an essential component of the United Nations Strategy. Lack of access to clean water is a clear determinant of poverty. It results in millions of children dying annually from diarrhoea and water related diseases. For women and children, collecting water is tiresome and time consuming. Better access to safe water and sanitation not only improves health but saves time, energy and enhances livelihood opportunities.

"Access to safe water is a fundamental human need and therefore a basic human right"

"Access to safe water is a fundamental human need and therefore a basic human right"

Kofi Annan
UN Secretary General

Quality &

From our head office in Thatcham UK, Wagtech International Ltd provides a unique world wide service. Sub offices are located in the Far East, Indian sub continent, East, West and South Africa, Central Asia, Middle East and South America. We also provide local support through a dealer network covering most countries in the world.

Our mission is to research, develop, manufacture and supply affordable monitoring equipment that is backed up by in country support via stockholding, installation, maintenance and training.

We aim to create partnerships between Government Ministries, bi-lateral and multilateral donors, NGO's, the private sector and civil society.

service

wagtech
environmental technologists

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feel free to ask for

- Fully priced quotations including freight charges to your destination.
- Technical advice and up to date information.
- Assistance with design and product selection for new laboratory start-up projects.
- A representative to make personal calls (we have a network of offices in many countries throughout the world).

www.wagtech.co.uk

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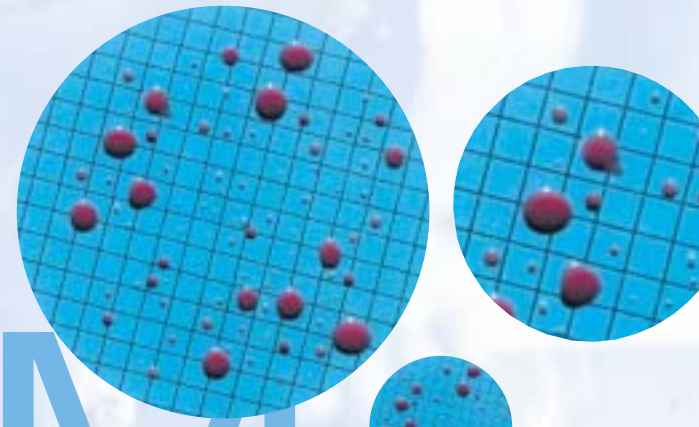
the need

for water testing...

Water, although an absolute necessity for life, can be a carrier of many water born diseases. Paradoxically, clean water is a necessity for the personal hygiene measures that are essential to prevent the transmission of diarrhoeal diseases.

microbiological testing

Irrespective of the origin of the water supply, it needs to be free from coliforms which are the main indicators of diseases such as typhoid, cholera, hepatitis, dysentery and other diarrhoeal related diseases.

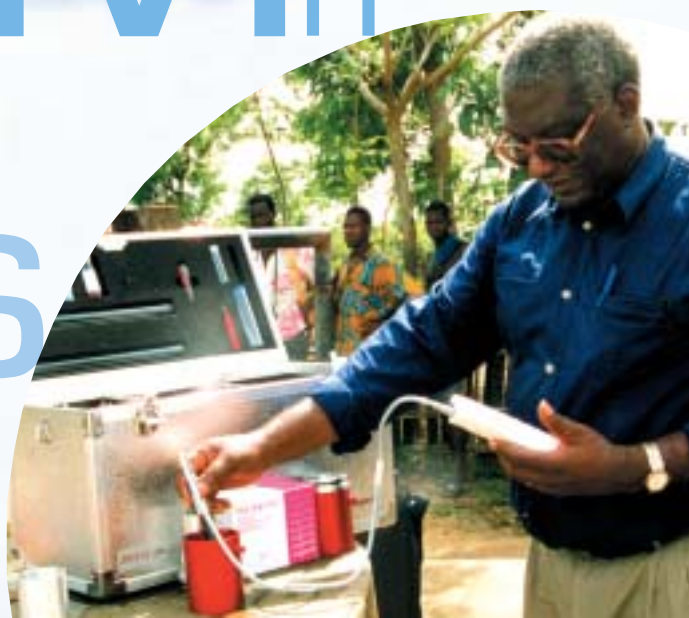


physico-chemical testing

A wide range of chemicals are found in water and many such as arsenic and fluoride are fatal at too high a concentration.

wagtech equipment range

Wagtech's range of water testing equipment is suitable for equipping **Fixed Site Laboratories** at **Basic**, **Intermediate** and **Advanced levels**. In addition, the comprehensive range of portable labs and kits allows a complete range of tests to be carried out to WHO guidelines. These include faecal and total coliforms, faecal streptococci, physico chemical parameters and heavy metals.



Portable water testing...

This complete range of portable laboratories and kits provide the following benefits:

No need to send samples back to a Central Lab

Results are quick, easy and accurate

Low cost and re-usable consumables

Modular depending on monitoring sophistication and budget

Conforms to WHO and EU Guidelines

At the top end of the portable range is the **Potalab** an extremely popular resource which essentially represents the capability of a water testing laboratory in a single compact unit, with twin incubators and digital instruments.

The **Potakit** is a scaled down version with less sophisticated instrumentation and a single incubator that is ideal for monitoring water quality programmes at district levels. The **Potaflex** is the ultimate portable system for flexible microbiological testing including faecal streptococci, pseudomonas, E-Coli and Total Coliforms.

The new **CP** range offers Public Health Inspectors and Groundwater Engineers a flexible and more focussed approach to physico-chemical monitoring using the latest technologies.

Heavy metals analysis is possible using the **PTEA** and the **Arsenator** monitors arsenic down to ppb levels. The **Office Lab** combines portability within fixed site disciplines. The following section offers the most affordable and practical solution for testing the quality of water in the field.

Potalab

Potakit

Potaflex

Arsenator

CP500

PTEA

POTALAB®

portable water testing...

Potalab 1 is a portable microbiological and physico-chemical testing laboratory designed to assess the suitability of drinking water on-site. It provides bacteriological testing using the accepted method of membrane filtration and incubation of faecal and total coliforms as an indicator of the presence of other harmful bacteria and viruses. The physico-chemical instruments are used in combination to quickly examine a supply to determine if a more detailed microbiological examination is required. All equipment is easily packed within the aluminium case for complete portability.

Potalab 2 provides the same equipment and facilities as Potalab 1, but without the physico-chemical instrumentation. The purpose of this unit is for microbiological testing only.

- For Microbiological, physico-chemical testing in the lab or field.
- Wide range of physico-chemical parameters can be measured using highly accurate digital instruments.
- More cost effective than central laboratory testing.
- Simple technique - Dual incubator allows analysis of both faecal & total coliforms simultaneously.
- Results incubated in just 14 hours.
- Completely portable - even runs off solar power.
- Uses low cost, long-life consumables, and equipment is easily sterilised in the field.
- Supplied with reagents for Ammonia, Arsenic, Chlorine, Fluorides, Nitrites and Nitrates as standard. Other parameters available on request.
- Conforms to WHO Guidelines.

Individual components are detailed on the following pages...

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POTALAB®

microbiological analysis potalab 1 & 2

portable water testing...

The bacteriological filtration unit:
is supplied with a pistol grip vacuum pump, sampling cup and line, alongside 200 pads, gridded membranes and 38.1g membrane lauryl sulphate broth.

Digital Dual Incubator
Microbiological Testing is carried out using Twin Incubators for the simultaneous incubation of Faecal and Total Coliforms. The temperature is digitally controlled and preset to 37°C and 44°C with an accuracy of ±0.1°C.

- Holds 2 racks of 25 Petri-Dishes allowing for up to 50 test's at any one time.
- Features digital automatic timer facility for logging the incubation period in case of power failure.
- Fully portable can be powered by mains, internal battery, vehicle battery (cigarette lighter lead supplied) or even solar power.

Specifications

Dual Incubator

Temperature Range	20°C to 50°C with preset levels at 37°C or 44°C, automatic timer
Display	Clear digital LCD, 0.1°C resolution
Capacity	2 X 25 aluminium dishes 2 X 8 plastic/glass dishes
Accuracy	± 0.1°C
Mains Power (AC)	220-240 V, 50Hz, 1 ph/110 V, 60 Hz, 1 ph
Battery Power (DC)	Integral 12 V re-chargeable battery through lead with crocodile clips and vehicle cigarette lighter socket plug
Dimensions	200 X 180 X 220 mm
Weight	6kg

Twin Incubator with digital readout & automatic timer

Solar Power Unit (optional accessory)

Membrane Filtration Unit, pistol grip vacuum pump

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POTALAB®

physico-chemical analysis

The following instruments are supplied as standard in the Potalab

Turbidity Meter

pH/temp/mV Meter

Conductivity/TDS Meter

Digital Arsenator

Specifications

Turbidity Meter

See also page 38

Range	0 to 1000 NTU
Resolution	0.01, 0.1, 1 NTU (dependent on measurement & range)
Accuracy	±2%/±3% of reading
Calibration	Push button at 0.02, 20.0, 100 & 800 NTU
Dimensions	68(W) x 155(L) x 46(H) (mm)
Weight	200g

Supplied with calibration kit.

pH/temp/mV Meter

See also page 39

pH Range	-2.00 to 16.00
Resolution & Accuracy	0.01 & ±0.01 pH
mV Range	±199.9 mV & ±1999 mV (Extended)
Resolution & Accuracy	0.1 mV & ±0.2 mV (within ±199.9 mV); 1 mV & ±2 mV (beyond ±199.9 mV)
Temperature Range	-10 to 110 °C
Resolution & Accuracy	0.1 °C & ±0.5 °C
No. of Calibration Points	Up to 5 points
ph Buffer Options	pH 1.68, 4.01, 7.00, 10.01, 12.45
Temperature Compensation	Automatic / Manual (0 to 100 °C)
Special Functions	Averaging/Stability; Self-diagnostic; Hold & Auto-Power Off after 20 minutes
Power	4 'AAA' x 1.4V batteries or 9VDC power adaptor

Supplied with electrodes and buffer solutions.

Conductivity/TDS Meter

See also page 38

Conductivity Range	0 to 19.99, 199.9, 1999 µS/cm; 2.00 to 19.99, 199.9 mS/cm
TDS Range	0 to 9.9, 99.9, 999 ppm; 1.00 to 9.99, 99.9ppt
Resolution	0.01, 0.1, 1µS; 0.01, 0.1mS (Conductivity) 0.01, 0.1, 1ppm; 0.01, 0.1ppt (TDS)
Accuracy	±0.2, 2, 20µS/cm; ±0.2, 2mS/cm (Cond) ±0.1,1,10ppm; ±0.1, 1ppt (TDS)
Temperature Range	-10 to 110.0°C
Resolution & Accuracy	0.1 °C & ±0.5 °C
TDS Factor	Adjustable 0.40 to 1.00
No. of Calibration Points	5 points (1 per range)
Temperature Compensation	Automatic / Manual (0 to 100 °C)
Special Functions	Auto-ranging; Averaging/Stability; Self-diagnostic; Hold & Auto-Power Off
Power	4 x 1.4V batteries or 9VDC power adaptor

Supplied with calibration standards.

Digital Arsenator

(see also page 16)

Range	2-100 µgl/ppb
Timing Facility	Up to 40 minutes
Resolution	LCD digital display
Power	PP3 9v Battery (included)
Consumables	Supplied with sufficient reagents and filters for 200 tests.

POTALAB®

physico-chemical analysis

portable water testing...

5000 Photometer

The Potalab Photometer 5000 offers a precise, accurate means of water analysis using an integral colorimeter with built-in colour filters. Used with the specially formulated reagents, the Photometer accurately assesses the colour formed in the test sample and displays the reading as a digital transmittance readout. This ensures accurate and repeatable results with no reliance on matching colour by eye.

Readings are compared against a calibration chart for each test. This way the instrument is universally applicable to a wide range tests without the need of manual re-calibration or for expensive plug-in calibration modules.

The Photometer is supplied with six glass test tubes and a dilution tube. Reagents for testing Free Chlorine, Arsenic, Fluorides Nitrites, Nitrates, and Ammonia are included with the Potalab in quantities for 200 tests of each type. A total of 38 different parameters can be tested using this instrument, all of which are listed on this page.

Reagents for use with 5000 Photometer

	Test	Range mg/l	250/200* Test Packs
	Alkalinity, total (Alkaphot)	0 – 500	Wag-WE10100
	Alkalinity M (Alkaphot M)	0 – 500	Wag-WE10102
	Alkalinity P (Alkaphot P)	0 – 500	Wag-WE10104
	Aluminium	0 – 0.5	Wag-WE10106
	Ammonia	0 – 1.0 (N)	Wag-WE10108
*	Boron	0 – 2.5	Wag-WE10110
	Bromine	0 – 6.0	Wag-WE10112
	Calcium Hardness (Calcicol)	0 – 0.5 (N)	Wag-WE10114
	Chlorine DPD (free)	0 – 5.0	Wag-WE10116
	Chlorine DPD (Free, Mono & Di chloroamine)	0 – 5.0	Wag-WE10118
	Chlorine DPD (Free, Combined & Total)	0 – 5.0	Wag-WE10120
	Chlorine HR	0 – 250	Wag-WE10122
	Copper (Coppercol)	0 – 5.0	Wag-WE10124
	Cyanuric Acid	0 – 200	Wag-WE10126
*	Fluoride	0 – 1.5	Wag-WE10128
	Hardness (Hardicol)	0 – 500	Wag-WE10130
	Hydrogen Peroxide LR	0 – 2.0	Wag-WE10132
	Hydrogen Peroxide HR	0 – 100	Wag-WE10134
	Iron LR	0 – 1.0	Wag-WE10136
	Iron MR	0 – 5	Wag-WE10137
	Iron HR	0 – 10	Wag-WE10138
	Magnesium (Magnecol)	0 – 100	Wag-WE10140
	Manganese	0 – 0.03	Wag-WE10142
	Molybdate LR	0 – 15	Wag-WE10144
*	Molybdate HR	0 – 100	Wag-WE10146
	Nitrate (Nitratest)	0 – 20 (N)	Wag-WE10148
	Nitrite (Nitricol)	0 – 0.5 (N)	Wag-WE10150
	Nitrite (Nitriphot)	0 – 1500	Wag-WE10152
	Organophosphate	0 – 20	Wag-WE10154
	Ozone	0 – 2.0	Wag-WE10156
*	pH (Phenol Red)	6.8 – 8.4	Wag-WE10158
	Phosphate LR	0 – 4.0	Wag-WE10160
	Phosphate HR	0 – 100	Wag-WE10162
*	Potassium	0 – 12	Wag-WE10164
	Silica	0 – 4.0	Wag-WE10166
*	Sulphate	0 – 200	Wag-WE10168
	Sulphide	0 – 0.5	Wag-WE10170
	Sulphite (Sulphitest)	0 – 500	Wag-WE10172
	Zinc	0 – 4.0	Wag-WE10174

Specifications

Wavelength Range	390-660nm
Operating Wavelengths	410nm, 490nm, 520nm, 570nm, 640nm, built-in filters
Filter Bandpass	±20nm
Display	10mm LCD
Range	0-100% transmittance
Resolution	1% transmittance
Test Chamber	Takes 10ml round glass test tube, 20mm OD, 18mm path length and 122°F to 158°F)
Battery	9 Volt
Battery Life	Lithium – 8000 readings Alkaline 2000 readings
Dimensions	170(W) X 130(L) X 45(H) (mm)
Weight	320g

A datasheet showing a full range of reagents is available on request.

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POTALAB®

portable water testing...

Specifications

Potalab 1

Microbiological Testing

Comprises the following components

Twin incubator with digital temperature display and automatic timer facility.

50 re-usable aluminium petri dishes. (inc: petri dish rack)

Electrical leads for AC110/220V operation, DC operation via vehicle cigarette lighter and crocodile leads along with separate re-chargeable battery. (external to incubator, but internal to carrying case)

Membrane filtration unit including collection flask, sampling cup, land line plus bronze disk, gaskets, O-rings, and pistol grip vacuum pump.

200 pads and membranes with pad dispenser, 38.1g membrane lauryl sulphate broth for 200 tests, 5 unique media measuring devices (mmd) for measuring precise amounts of lauryl sulphate broth. (i.e, 10 tests only)

Tweezers, 5 dropping pipettes, 4 autoclavable plastic bottles, hand lens, lighter, pen, clippers, screwdriver and a tube of lubrication grease.

Physico-Chemical-Testing

Conductivity/TDS Meter, pH/Temp/mV meter and a digital Turbidity Meter.

Wagtech Photometer with reagents for chlorine, nitrates, nitrites, ammonia and fluorides.

Wagtech Digital Arsenator inc: filters, tablets and filter holders, sufficient for 200 Arsenic tests.

Purchase details

Potalab 1:

Portable water testing laboratory for microbiological and physico-chemical testing, for use in lab/field. (weight 20Kg)

Wag-WE10010

Potalab 2:

For microbiological testing only. (weight 18Kg)

Wag-WE10020

For a full range of spares and consumables please refer to pages 11 & 12.

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POTAKIT®

portable water testing...

Potakit 1 is a low-cost, fully portable microbiological and physico-chemical testing kit designed to measure the key parameters of drinking water quality in the field. The instruments in the Potakit use simple techniques with low cost consumables to enable those with a non-technical background and minimum training to obtain accurate test results. Potakit 2 is for microbiological use only.

The instruments involved are slightly less sophisticated than those in the Potalab – which in many cases makes the Potakit an affordable and effective resource.

Potakit 1 measures the following parameters; Faecal and Total Coliforms, pH, Conductivity/TDS, Turbidity, Chlorine, Nitrates, Nitrites, Ammonia, Fluorides and Arsenic.

- Low cost long-life consumables.
- New design, portable single pot incubator operates between 37°C & 44°C (switchable).
- User friendly instruments for all chemical parameters.
- Includes new visual arsenic testing kit, supplied with reagents (VCDK).
- Affordable and effective resource for measuring microbiological and physico-chemical parameters.
- Meets WHO & EU guidelines.

Individual components are detailed on the following pages...

Specifications

Potakit 1

Microbiological Testing

Comprises the following components

Single Incubator, switchable between 37°C & 44°C, spirit thermometer, 20 re-usable aluminium petri dishes.

Power supply to incubator is via an integral 220/110V ac mains adaptor/ battery charger, electrical lead for 12V DC operation via vehicle dash board cigarette lighter, and crocodile lead for use with re-chargeable battery.

Membrane filtration unit inc:
(same specifications as supplied in Potalab on page 3 except hand pump is rubber vacuum type)

Physico-Chemical Testing

Pocket Conductivity meter, pH meter, a 2 part Turbidity tube, a Wagtech Colour Comparator with colour discs and reagents for 200 tests of Chlorine, Nitrates, Ammonia, Nitrites and Fluorides; and the Wagtech visual Arsenic Kit (VCDK). Supplied in a robust aluminium case.

Purchase details

Potakit 1:
Portable microbiological and physico-chemical testing laboratory. (weight 10Kg)

Wag-WE10030

Potakit 2:
Portable microbiological testing laboratory. As Potakit 1 less items for Physico-Chemical testing. (weight 9Kg)

Wag-WE10040

For a full range of spares and consumables please refer to pages 11 & 12.

POTAKIT®

microbiological analysis Potakit 1 & 2

Single Incubator

The Potakit Incubator

This small single portable incubator will allow a complete and accurate bacteriological analysis to be carried out in the field, for the analysis of Faecal and Total Coliforms (switchable between 44 °C & 37°C).

- A total of 20 tests can be carried out at one time.
- Petri Dishes held in aluminium racks for easy loading.
- Totally portable – can run off mains, vehicle (cigarette lighter lead supplied) or even solar power.

Specifications

Potakit Incubator

Temperature settings	Switchable between 37°C and 44°C
Capacity	20 petri dishes
Accuracy	± 0.2°C
Power switchable AC	220-240 V, 50Hz, 1 ph/110 V, 60 Hz, 1 ph
internal DC external DC	Power supply to incubator is via an integral 220/240V AC mains adaptor/battery charger, plus electrical lead for 12V DC operation via vehicle cigarette lighter and crocodile lead for re-chargeable battery.
Dimensions	155 X 230 X 200 mm
Weight	3.3kg

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POTAKIT®

physico-chemical analysis

The following instruments are supplied as standard in Potakit 1

pH Meter

Specifications

pH Meter

Range	-1.0 to 15.0 pH
Resolution	0.1 pH
Accuracy	± 0.1 pH
Calibration	3 pt (4.0, 7.0 or 10.0)
ATC	Yes
Electrode Type	Single junction
Battery Life	> 60 hrs

Conductivity Meter

Conductivity Meter

Range	1999 µS/cm
Resolution	1 µS/cm
Accuracy	± 1% of full scale
ATC	Yes
Temperature Display	-5.0 to 55°C
Temperature Calibration	± 5 °C
Battery Life	> 140 hrs

Arsenator Detection Kit (VCDK)

Arsenator Detection Kit (VCDK)
(Patent pending)

This kit features a unique tri-filter arsenic trap which removes excess arsine gas as well as any hydrogen sulphide which also may be given off as a by-product of the reaction.

The detection pack includes:

- Colour Chart (readings up to 10-500 ppb).
- Sufficient filters tablets & filter holders to conduct up to 200 tests.

Turbidity tube

Turbidity Tube

2 Part acrylic tube, graduated 5 to 500 JTUs. Uses extinction method.

POTAKIT®

physico-chemical analysis

portable water testing...

Colour Comparator

The Colour Comparator Kit is quick and easy to use and gives accurate reliable results. The kit is used in conjunction with tablet reagents and colour charts to test 32 different parameters. Just add a tablet reagent to the test sample, place the tube in the comparator and match the colour against the appropriate colour disc.

The standard Comparator Kit includes:

- Comparator, 4 square cuvettes and dilution tube.
- The kit contains no reagents or discs these should be ordered separately.
- Wag-Sac Rucksack available which is ideal for carrying discs and reagents.

Colour Comparator Kit Wag-WE10195

Colour Discs

Test	Range mg/l	
Alkalinity (Alkavis)	0 – 250	Wag-WE10200
Aluminium	0 – 0.5	Wag-WE10202
Ammonia	0 – 1.0 (N)	Wag-WE10204
Bromine	0 – 2.0	Wag-WE10206
Bromine	0 – 8.0	Wag-WE10208
Chlorine DPD	0 – 5.0	Wag-WE10210
Chlorine DPD (Mono & Di Chloramine)	0 – 5.0	Wag-WE10212
Chlorine DPD (combined & total)	0 – 5.0	Wag-WE10214
Chlorine DPD (total)		Wag-WE10216
Chlorine HR	0 – 50	Wag-WE10218
Chlorine HR	0 – 250	Wag-WE10220
Copper (Coppercol)	0 – 5.0	Wag-WE10222
Fluoride	0 – 1.5	Wag-WE10224
Hydrogen Peroxide LR	0 – 2.0	Wag-WE10226
Hydrogen Peroxide HR	0 – 100	Wag-WE10228
Iron MR	0 – 5	Wag-WE10232
Maganese	0 – 0.03	Wag-WE10234
Molybdate HR	0 – 100	Wag-WE10236
Nitrate (Nitratest)	0 – 20 (N)	Wag-WE10238
Nitrite (Nitricol)	0 – 0.5 (N)	Wag-WE10240
Ozone	0 – 2.0	Wag-WE10242
pH value (Bromocresol Purple)		Wag-WE10244
pH value (Bromothymol Blue)		Wag-WE10246
pH value (Phenol Red)	6.8 – 8.4	Wag-WE10248
pH value (Thymol Blue)		Wag-WE10250
pH value (Universal pH)		Wag-WE10252
Phosphate LR	0 – 4.0	Wag-WE10254
Phosphate HR	0 – 100	Wag-WE10256
Silica	0 – 4.0	Wag-WE10258
Sulphide	0 – 0.5	Wag-WE10260
Zinc	0 – 4.0	Wag-WE10262

Comparator Reagents, Pack 250 tests

Test	Range mg/l	
Alkalinity (Alkavis)	0 – 250	Wag-WE10300
Aluminium	0 – 0.5	Wag-WE10302
Ammonia	0 – 1.0 (N)	Wag-WE10304
Bromine	0 – 2.0	Wag-WE10306
Bromine	0 – 8.0	Wag-WE10308
Chlorine DPD	0 – 5.0	Wag-WE10310
Chlorine DPD (Mono & Di Chloramine)	0 – 5.0	Wag-WE10312
Chlorine DPD (combined & total)	0 – 5.0	Wag-WE10314
Chlorine DPD (total)		Wag-WE10316
Chlorine HR	0 – 250	Wag-WE10318
Copper (Coppercol)	0 – 5.0	Wag-WE10320
Fluoride	0 – 1.5	Wag-WE10322
Hydrazine Powder	0 – 0.5	Wag-WE10324
Hydrogen Peroxide LR	0 – 2.0	Wag-WE10326
Hydrogen Peroxide HR	0 – 100	Wag-WE10328
Iron LR	0 – 1.0	Wag-WE10330
Iron MR	0 – 10	Wag-WE10332
Maganese	0 – 0.03	Wag-WE10336
Molybdate HR	0 – 100	Wag-WE10338
Nitrate (Nitratest)	0 – 20 (N)	Wag-WE10340
Nitrite (Nitricol)	0 – 0.5 (N)	Wag-WE10342
Ozone	0 – 2.0	Wag-WE10344
pH value (Bromocresol Purple)		Wag-WE10346
pH value (Bromothymol Blue)		Wag-WE10348
pH value (Phenol Red)	6.8 – 8.4	Wag-WE10350
pH value (Thymol Blue)		Wag-WE10352
pH value (Universal pH)		Wag-WE10354
Phosphate LR	0 – 4.0	Wag-WE10356
Phosphate HR	0 – 100	Wag-WE10358
Silica	0 – 4.0	Wag-WE10360
Sulphide	0 – 0.5	Wag-WE10362
Zinc	0 – 4.0	Wag-WE10364

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POTALAB® & POTAKIT®

spares, accessories and consumables

Description

Membrane Filtration Unit	Wag-WE10400
Spares Kit for Filtration Unit, comprising of filter disk and gasket kit	Wag-WE10402
Aluminium petri dishes (55 mm diameter by 4 mm depth)	
Pack of 25 for Potalab	Wag-WE10404
Pack of 20 for Potakit	Wag-WE10406
Sterile plastic petri dishes (50 mm diameter by 11 mm depth)	
pack of 700	Wag-WE10410
Pair tweezers	Wag-WE10412
Cigarette lighter	Wag-WE10414
Hand Lens	Wag-WE10416
Screwdriver	Wag-WE10418
Lubricating grease – 60g tube	Wag-WE10420
Nail clippers	Wag-WE10422
Spare internal battery for Potalab	Wag-WE10424
Spirit thermometer for checking incubator temperature	Wag-WE10426
WagPac – disposable water sample bags (Pack of 500)	Wag-WE10428
Media Measuring Device (MMD) (pack of 5)	Wag-WE10429

Solar Power System

For providing power in remote locations. Easily transportable with enough power to re-charge the incubators in the Potalab and Potakit laboratories. Wag-WE10444

Solar Power Unit

Individual Physico-Chemical Meters & Accessories

2-Part Turbidity Tube, 5-500 JTU	Wag-WE10438
Turbidity Meter, 0–50 NTU, 50–1000 NTU	Wag-WE30140 see page 38
General purpose pH/temperature/mV Meter	Wag-WE30200 see page 39
Portable Conductivity/TDS Meter	Wag-WE30215 see page 4
Pocket Conductivity Meter	Wag-WE30040 see page 36
Potalab Photometer	Wag-WE10440 see page 5
pH Buffer Tablets, Box 50	Wag-WE30544 see page 46
Conductivity Standard Solution, 500ml	Wag-WE30564 see page 46

Description

Reagents for Potalab Photometer and Wagtech Comparator
(See pages 5 & 10 for full list)

Coliform Starter Pack, 200 grid membranes, pads and growth medium for 200 tests	Wag-WE10450
Lauryl Sulphate Broth, 500g (2,600 tests)	Wag-WE10452
Lauryl Sulphate Broth, 38.1 g (200 tests)	Wag-WE10454
Lauryl Sulphate Broth, 1.92g sachets (10 tests),pack of 25	Wag-WE10456
Faecal Streptococci Starter Pack (Slanetz & Bartley Medium) for 200 tests	Wag-WE10458
Absorbent pads and membranes (pack of 200)	Wag-WE10460
(pack of 1000)	Wag-WE10462
Pad dispenser	Wag-WE10464

Pre-prepared Media

These are small ampoules and vials which contain a pre-prepared 2ml quantity of media. Being pre-prepared, they have the advantage of convenience and of always being sterile.

Faecal Coliform Ampoules, 2ml (Pack of 40)	Wag-WE10468
Total Coliform Ampoules, 2ml (Pack of 40)	Wag-WE10470

Wagtech Pre-prepared dip slides

These are pre-sterilised gridded dip slides that are already impregnated with coliform media. Simply dip the slide into the water sample, place in the incubator and set at 44°C for faecal coliforms and 37°C for total coliforms. Suitable for use with Potaflex incubators only.

Wag-WE10472

WagSac

Ideal for carrying additional reagents and accessories.

Wag-WE10476

POTALAB® & POTAKIT®

spares, accessories and consumables

Field Spares Kits

Field spares kit for Potalab 1

Comprising: Filtration unit spares kit (filter disc and gaskets), Coliform Starter Pack for 200 tests, 200 free chlorine DPD tablets, 1 photometer tube, 2 instrument batteries, buffer and calibration solutions, 1 media measuring device (MMD).

Wag-WE10430

Field spares kit for Potalab 2

Comprising: Filtration unit spares kit (filter disc and gaskets), Coliform Starter Pack for 200 tests, 1 media measuring device (MMD).

Wag-WE10431

Field spares kit for Potakit 1

Comprising: Filtration unit spares kit (filter disc and gaskets), Coliform Starter Pack for 200 tests, spare thermometer, 200 free chlorine DPD and pH tablets, 2 square test tubes, 1 media measuring device (MMD).

Wag-WE10432

Field spares kit for Potakit 2

Comprising: Filtration unit spares kit (filter disc and gaskets), Coliform Starter Pack for 200 tests, spare thermometer, 1 media measuring device (MMD).

Wag-WE10433

Automatic Laboratory Steriliser

Top loading

9 and 12 litre capacity versions

Sterilises at 126°C

Total cycle time of less than 22 minutes

Automatic electronic time & temperature control

End-of-cycle cut off

Water level control

Powder coated aluminium cover and body

With carry handles

Power Supply 220/240V, 1500W

(Other voltages are available, please contact our sales department for further details)

Supplied with instrument container, small instrument tray and lifter, Vee-support, box of 50 x sterilisation control indicator strips, spare gasket, 2 x 10A fuses and operating instructions.

Automatic Laboratory Steriliser, 9 litres	Wag-WE10434
Automatic Laboratory Steriliser, 12 litres	Wag-WE10435
Spare Parts Kit for Sterilisers	Wag-WE10436

Portable Steam Sterilisers

Rugged, non-electric autoclaves which offer the ultimate in portability and strength of construction. Designed specifically to meet the requirements of WHO/UNICEF standards for immunisation to E9/PS.1.

- Constructed from heavy gauge, rustproof aluminium.
- Portable and Lightweight.
- Can be used with a variety of heat sources – kerosene stoves, gas burners, electrical heating elements, even wood and charcoal.
- Heat resistant phenolic handles.
- Available in two sizes – 4.4 or 9 litres capacity.

Purchase details

Double Rack Portable Steam Steriliser:
9 litres – Supplied with two syringe racks, safety plugs and instruction manual.

Wag-WE10446

Spare Parts Kit for Double Rack Portable Steam Steriliser

Wag-WE10447

Single Rack Portable Steam Steriliser,
4.4 litres – supplied with syringe rack, safety plugs and instruction manual.

Wag-WE10448

Spare Parts Kit for Single Rack Portable Steam Steriliser:

Wag-WE10449

POTAFLEX®

portable water testing...

The Flexi Rack System (FRS)

This is a unique device that allows the analysis of different microbiological parameters using different methods and materials Simply choose between re-usable aluminium petri dishes, pre-prepared nutri disks, pre-prepared dip slides or a combination of each. The unit can accommodate either 20 disposable nutri disks, up to 40 re-usable aluminium petri dishes or up to 10 dip slides.

The Potaflex portable microbiological laboratory has been designed in conjunction with ICRC and is an ideal resource for testing microbiological parameters in the field.

The unique Flexi Rack System provides the user with a wide range of media options to suit their preferences and ensures the maximum amount of tests can be performed at any one time.

- Fully portable - specially designed for field use.
- Extremely versatile - can test for a variety of bacteria, including: Pseudomonas, Faecal Streptococci, Coliforms. (Faecal and Total Coliforms)
- Flexi media options - wide range of pre-prepared dip slides and Nutri Disks can be tested.
- Meets WHO & EU guidelines.
- Pre-prepared dip slides are simply dipped into the water sample, inserted into the unit and then placed into the incubator.

Flexi Rack System

Tel: +44 (1635) 872929
Fax: +44 (1635) 862898/872808

email: export@wagtech.co.uk
Web: www.wagtech.co.uk

POTAFLEX®

portable water testing...

Membrane Filtration System

A membrane filtration unit is supplied as standard with the Wagtech Potaflex System.

- Easily sterilised and consists of:

A collection flask
Sample cup
Bronze disk
Gaskets & O rings
Land line
Pistol grip vacuum pump

Potaflex Incubator System

The incubator unit is located within a sturdy carrying case and has a temperature range of +20°C to 50°C. Typically temperatures are set at 37°C for total coliforms and 44°C for faecal coliforms and faecal streptococci. However the flexible range can be set at other temperatures such as 42°C for pseudomonas.

Incubation

Simply open the incubator, place the selected type of test into the Flexi Rack System (FRS).

Then place the FRS in the incubator, close the lid and set the required temperature on the LCD controller.

Specifications

Potaflex Incubator

Temperature settings	+20°C to 50°C, Variable
Accuracy	± 0.1°C
Capacity	40 aluminium petri dishes 20 Nutri Disks 10 dip slides
Display	LCD, clear digital
Power	12v DC Power supply to incubator is via an integral 230v AC mains adaptor/battery charger, plus electrical lead for 12v DC operation via vehicle cigarette lighter and crocodile lead for re-chargeable battery.
Dimensions Internal External	 130 X 150 X 110mm 200 X 250 X 180mm
Weight	4 Kg

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POTAFLEX®
purchase details

Specifications

Wagtech Potaflex
Microbiological Laboratory

Comprises the following components

2 litre incubator, with digital temperature display.

Flexible Rack System (FRS)

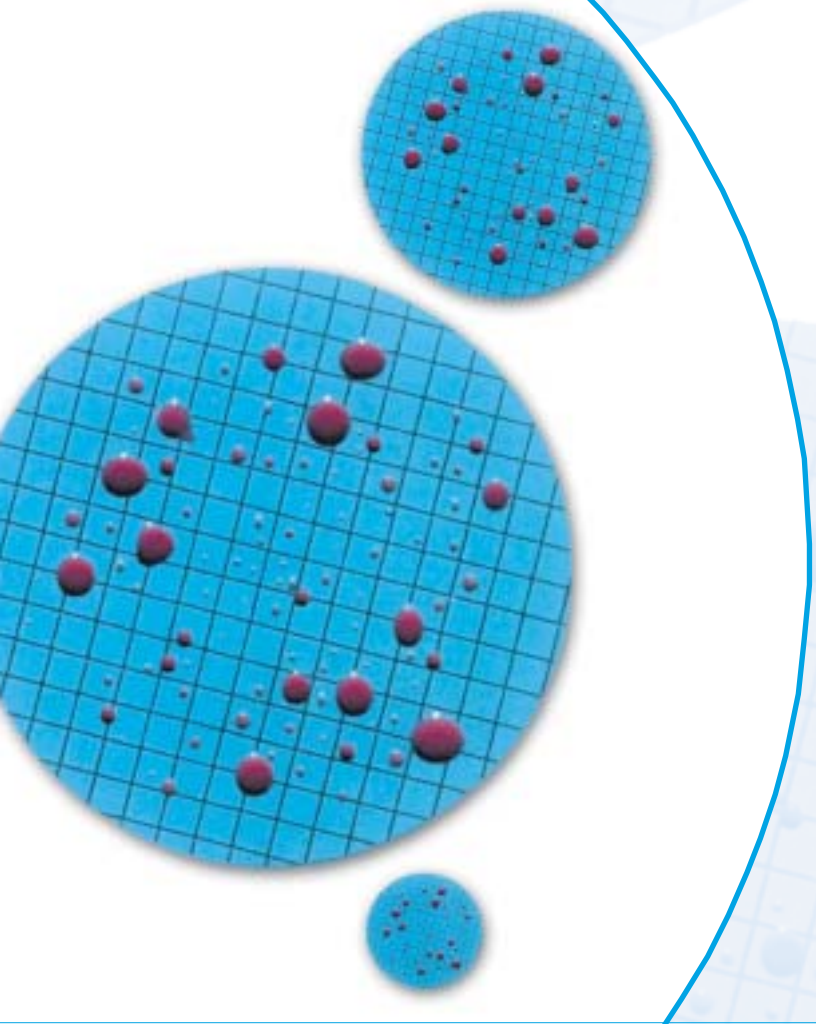
20 aluminium petri dishes, 5x Media measuring device (MMD), 200 pads, membranes and 38.1g membrane lauryl sulphate broth.

AC mains lead and vehicle battery cigarette lighter lead

Membrane filtration unit inc: collection flask, sampling cup, 2m land line plus bronze disk, gaskets, O-rings, and pistol grip vacuum pump.

Tweezers, 5 dropping pipettes, 4 plastic bottles, hand lens, lighter pen, clippers, screwdriver and a tube of lubrication grease.

All of which is housed in a rugged lockable aluminium flight case.



Purchase details

Potaflex:
Portable water microbiological laboratory for use in lab/field. (weight 10Kg)
Wag-WE10050

Azide Nutri Disks:
For the detection of faecal streptocci in water and foodstuffs. (pack of 50)
Wag-WE10060

Cetrimide Nutri Disk:
For the detection of pseudomonas aeruginosa in water and foodstuffs. (pack of 50)
Wag-WE10062

M-FC Nutri Disk:
For the detection of E.Coli and faecal coliforms in water and foodstuffs. (pack of 50)
Wag-WE10064

Plate count Nutri Disk:
For the determination of Colony Counts in Water, Milk and Food. (pack of 50)
Wag-WE10066

Bismuth – Sulphite Nutri Disk:
For the detection of Salmonellae in Water, food & other clinical materials
Wag-WE10067

For use with re-usable Aluminium Petri Dishes
Supplied for 200 tests as follows:

Coliform starter pack:
Grid membranes, pads and growth medium. (200)
Wag-WE10450

Lauryl Sulphate Broth:
Tube of 38.1g (for 200 tests)
Wag-WE10454

Absorbent pads and membranes: Wag-WE10460

Pre-prepared dip slides:
Sterilised gridded dip slides, impregnated with coliform media. (pack of 25)
Wag-WE10472

DIGITAL ARSENATOR®

portable digital arsenic testing

Patent Pending

The Wagtech Arsenator system is the lowest cost, most portable and accurate method for determining Arsenic in safe limits (WHO guide-lines 10 ppb/µgl). Carefully designed to be simple and safe to use, either in the lab or in the field. The complete system comes with sufficient reagents and consumables for over 400 tests.

- Low cost digital arsenic testing device.
- Fully portable, designed specially for field use.
- Simple, safe and easy to operate.
- Gives accurate test results between the critical range of 2µgl (ppb) to 100µgl (ppb).
- Designed in conjunction with Prof. Walter Kosmus and laboratory tested by Imperial College London.
- Field tested in conjunction with UNICEF/WHO WAT/SAN monitoring programmes.
- Environmentally friendly.

Specifications

Arsenator

Range	2-100 µgl/ppb
Timing Facility	Up to 40 minutes
Resolution	LCD digital display
Power	PP3 9V Battery (included)

Wagtech Arsenator comprises the following components:

Portable Digital Arsenator System
Tri-Filter Arsenic gas trap
5x Arsenic collection filter holders (Black)
5x Arsine gas removal filter holders (Red)
10x Hydrogen Sulphide removal filters
420x Reagent A1 (dry powder sachet)
420x Tablet A2
420x Arsenic collection filters
420x Arsine gas removal filters
Colour comparison chart (<10 to 500ppb)
Dilution tube
Spare battery
Waste disposal bags
Gloves and tweezers
Instruction manual

Purchase details

Wagtech Digital Arsenator:
Fully complete and supplied with the above specifications, all of which is neatly housed in a robust carrying case for easy handling and storage.

Wag-WE10500

Refill Pack:
Contains sufficient filter holders and tablets for 200 tests.

Wag-WE10560

Tel: +44 (1635) 872929
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ARSENIC GENERATOR MULTI-PACK®

Patent Pending

A mobile workstation consisting of 5 complete sets of Arsenic Generators, allowing for up to 5 tests to be conducted simultaneously. All of which is supplied in a custom built carrying case.

Purchase details

Multi-Pack Accessory:
Contains 5 additional workstations, which comprise the following: 5 flasks, 5 Tri-Filter Arsenic trap, 15 red and black filter slides, 5 colour charts and 15 hydrogen sulphide removal filters. All of which are housed in a rugged carrying case, that also provides a stable working area.

Wag-WE10540

Refill Pack:
Contains sufficient filter holders and tablets for 200 tests.

Wag-WE10560

LOW COST VISUAL DETECTION KIT (VCDK)®

arsenic testing in the field

Patent Pending

A low cost, fully portable arsenic detection pack, which allows for the quantative, visual analysis of arsenic in drinking water from less than 10 µg/l (ppb) up to 500 µg/l (ppb).

The kit features a unique tri-filter arsenic trap which removes excess arsine gas as well as any hydrogen sulphide which may also be given off as a by-product of the reaction. Both reagents are added to the water sample in the flask and the colour chart is then visually compared to get a reading.

These filters are compatible with the Digital Arsenator and can therefore be accurately verified if necessary.

- Ideal for quick mass screening.
- Low cost per test.
- Simple and easy to operate.
- Environmentally friendly.
- Safe handling – no chemical liquids.
- Housed in a robust custom built carry case.

Wagtech Visual Detection Kit (VCDK) comprises the following components:

1x Unique tri-filter arsenic trap and a 125ml graduated flask
4x Arsenic collection filter holders (Black)
4x Arsine gas removal filter holders (Red)
4x Hydrogen Sulphide filters
Colour comparison chart (<10 to 500ppb)
Gloves, tweezers and bags
Sufficient tablets, reagents and filters to perform 200 tests

Purchase details

Visual Detection Pack (VCDK):
Supplied complete with the generator, 3 filter arsine gas trap and sufficient filters and tablets for up to 200 tests.

Wag-WE10600

Refill Pack:
Contains sufficient filter holders and tablets for 200 tests.

Wag-WE10560

WAGTECH CP500®

portable water testing...

The CP range of labs have been purposely designed for testing a wide range of chemical & physical parameters out in the field.

Each kit contains a carefully selected range of high quality components that makes them an ideal resource for the Field Engineer or Hydrologists on the move.

- Digital Photometer gives instant and accurate readings for up to 40 different chemical parameters.
- Instrumentation and equipment included to measure pH, Temperature, Conductivity, TDS and Turbidity.
- Ground water testing and public health testing reagent starter pack available.
- Packed in a rugged carrying case for extreme portability.

Specifications

Comprises the following components:

Photometer 5000 see page 5
Dilution tube
Conductivity/TDS meter see page 4
pH/temp/mV Meter see page 4 & 39
Portable Turbidity Tube
Calibration Screwdrivers
pH Calibration kit
Conductivity Calibration kit
Sample Bottles, autoclavable 60ml
Aluminium Carrying Case
Training Procedure Manual
Full Operating Instructions
Water Quality Report Sheets

Purchase details

Wagtech CP500:
Fully complete and supplied with the above specifications, all of which is neatly housed in a robust carrying case for easy handling and storage.

Wag-WE10700

Test Reagents - please select desired parameters on page 5. (for use with Photometer 5000)

Tel: +44 (1635) 872929
Fax: +44 (1635) 862898/872808

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email: export@wagtech.co.uk
Web: www.wagtech.co.uk

WAGTECH CP1000®

portable water testing...

- The ultimate field resource incorporating the most comprehensive range of digital instrumentation.
- Includes the Advanced 8000 digital Photometer for reliable, accurate and precise analysis of chemical testing.
- Digital hand held instrumentation for Turbidity, pH, Temperature, Conductivity and TDS.
- Reagent starter pack available for Groundwater and Public Health testing.
- Supplied in a compact and rugged aluminium carry case.

Specifications

Comprises the following components:

- 8000 Advanced Photometer see page 20
- Round Test tubes (pack of 5)
- Test Tube Rack
- Conductivity/TDS meter see page 4
- pH/temp/mV Meter see pages 4 & 39
- Portable Turbidity Meter see page 38
- Calibration Screwdrivers
- pH Calibration kit
- Conductivity Calibration kit
- Turbidity Standard
- Plastic Bottles, autoclavable 60ml
- Aluminium Carrying Case
- Training Procedure Manual
- Full Operating Instructions
- Water Quality Report Sheets

Purchase details

Wagtech CP1000:
Fully complete and supplied with the above specifications, all of which is neatly housed in a robust carrying case for easy handling and storage.

Wag-WE10720

Accessories

WG HandScan OXY 4:
Dissolved oxygen meter.
(see page 40 for further details) Wag-WE30240

Public Health Testing Reagent Starter Pack:
A pack of reagents (200 of each) for testing the following parameters that conform to WHO Guidelines for testing drinking water: Ammonia, Aluminium, Boron, Chlorine, Copper, Fluoride, Iron, Maganese, Phosphate, Nitrates, Nitrites and Zinc. All of which is supplied in a robust hand carry sack. For other tests see page 5

Wag-WE10730

Groundwater Testing Reagent Starter Pack:
A pack of reagents (200 of each) that cover a wide range of parameters of local significance including: Alkalinity (Total), Boron, Calcium, Chloride, Fluoride, Iron LR & HR, Manganese, Magnesium, Total Hardness, Nitrate, Nitrite, & Phosphate. All of which is supplied in a robust hand carry sack. For other tests see page 5

Wag-WE10740

PHOTOMETER 8000

portable water testing...

The Photometer 8000 is designed using the latest technologies to provide fast accurate and reliable results for a wide range of water quality testing.

- High precision instrument with automatic method set-up and wavelength setting.
- Full range of pre-programmed clean and waste water tests with auto test selection for tubetests.
- Touch-screen with language selection.
- Advanced optics technology with high sensitivity.
- Multi-size cell holder automatically adjusts to round tubes 13-20mm.
- Efficient light focussing system.
- Remote software update by e-mail.

Specifications

Instrument Type	Direct-reading colorimeter with automatic set-up and reading
Operating Wavelength	Pre-programmed wavelengths of: 420nm, 500nm, 550nm, 575nm, 600nm, and 650nm
Display	Touch-screen backlit display Test identification and prompts in foreign languages. Direct-reading of results in mg/l or µmol/l (user selectable)
Accuracy	±0.005 at 0.3au
Resolution	Transmittance resolution to 0.1% and absorbance resolution to 0.001au
User-Selectable Options	Date format, display language, test, units, sample number, dilution, user id and wavelength
Internal Memory	1000 sample results can be stored in on-board memory and selectively recalled to screen
Output Interface	Bi-directional communication with output to printer via RS232 serial interface
Power	Standard mains power, optional battery power through standard 'AA' batteries
Size & Weight	290 X 240 X 90mm and weighs 1.65Kg

Purchase details

Photometer 8000:	Wag-WE10750
Spare Testing Tubes: pack of 5	Wag-WE10755

The Photometer 8000 does **NOT** come with reagents. Please refer to page 5 for a full range of reagents available for purchase.

PORTABLE HYDROCARBON ANALYSER

The Wagtech Portable Hydrocarbon Analyser is designed to measure ppm levels of petroleum hydrocarbons in water and also to meet field monitoring requirements. In the analytical mode, it gives fast and accurate quantitative data for petroleum hydrocarbons in water. The data correlates very well with lab gas chromatographic analysis. In the screening mode, it offers fast relative data on petroleum hydrocarbon contamination, tracking field gas chromatograph data for TPH, and responds strongly to BTEX components.

- Provides in-situ real time information.
- Pays for itself with lower analysis costs.
- Reduces sample collection.
- Logs data from 100 samples.
- Easy to calibrate.
- Serial output to laptop or printer.
- Easy to use menu driven software.

Typical applications include:

- Site assessment
- Storm/waste water monitoring
- Leak detection for buried fuel tanks
- Well plume monitoring
- Spill control
- Remediation monitoring

The unit works equally well for ground water, surface water, waste water, soil samples.

Specifications

Water

Operating Range	0-2,000 ppm as TPH
Lower Limit of Detection	0.1 ppm as xylene
Hydrocarbons Detected	C6 and higher MW petroleum hydrocarbons
Accuracy/Precision	±10% of reading
Response Time (initial)	<5 seconds
Response Time (to 95%)	<5 minutes
Operating Temperature Range	0°- 50°C
Trend Correlation with GC data	95%

Purchase details

Wagtech Portable Hydrocarbon Analyser:
Supplied complete with calibration solution, charger, interface cable and a professional air/water tight rugged carrying case.

Wag-WE10780

PTEA®

portable trace element analyser

The PTEA is a portable analyser designed to identify and measure the concentrations of heavy metals ions in a wide range of matrixes. It can be used either as a stand-alone unit or connected to a laptop or desktop computer running the supplied software.

The PTEA comprises a small analytical cell assembly and controller used together to provide a very convenient and portable tool for on site analysis. The controller uses on screen messages to guide the user through the analytical stages, intelligently identifying if incorrect standards or reagents are used as well as checking reagents for purity.

The principle of analysis used by the PTEA is Anodic Stripping Voltammetry (ASV), a well established electrochemical technique that has obtained internationally recognised approvals.

- Completely portable.
- Allows analysis in the field or laboratory.
- Low running costs easy to use.
- Parts per billion (ppb) detection levels.
- Results obtained in as little as 30 seconds.
- Short set up time (within 10 minutes).
- Stand-alone operation for ultimate on site practicality.
- Self contained, needs no gases, flames, lamps, radiation sources or expensive reagents.
- Less than 5Kg for the complete analyser with batteries analysis cup and carry case.
- Multi metal capability when linked to a PC via VAS software.
- Upgradeable internal software available to update analytical features and new application menus for stand-alone use.
- Supplied with silver/silver chloride reference electrode.

Reagents

Electrolyte:

The PTEA requires electrolyte to be added to the sample to aid analysis. The detection limit for heavy metals is typically 5 part per billion (µg/l). Analytical grade reagents can contain as much as 5mg/l (5ppm) of heavy metal. This concentration would cause false results to be obtained by contributing to the heavy metals in the sample.

Wagtech reagent packs are produced under strict QC procedures that guarantee the reagents are heavy metal free.

The PTEA Consumables Kit contains all the reagents and consumables for approx 200 tests.

Soil Extraction Kits:

Wagtech have a range of kits that extract heavy metals from soil samples while on site.

Each kit provides all of the reagents and components needed to prepare 10 samples.

PTEA®

portable trace element analyser

Every PTEA system is supplied with a powerful but easy to use software program that gives the PTEA the functionality of a laboratory instrument. It also allows the PTEA controller to be programmed with specific methods and firmware upgrades.

Element	LDL ppb (Field use)	LDL ppb (Lab use)	UDL ppm
Arsenic As	10 ppb	10 ppb	32 ppm
Cadminum Cd	10 ppb	5 ppb	32 ppm
Chrominium Cr^{6+}	10 ppb	5 ppb	32 ppm
Cobalt	10 ppb	5 ppb	32 ppm
Copper Cu	10 ppb	5 ppb	32 ppm
Gold Au	50 ppb	5 ppb	32 ppm
Iron Fe	10 ppb	5 ppb	32 ppm
Lead Pb	10 ppb	5 ppb	32 ppm
Maganese Mn	10 ppb	5 ppb	32 ppm
Mercury Hg	10 ppb	5 ppb	32 ppm
Silver Ag	10 ppb	5 ppb	32 ppm
Tin Sn	10 ppb	5 ppb	32 ppm
Zinc Zn	10 ppb	5 ppb	32 ppm

Chemical Specifications:

- Analytical range with software 0.005ppm-32ppm.
- Analytical range without software 0.01ppm-32ppm.
- Resolution 1ppb.
- Precision +/-5% at 100 ppb.
- Calibration using standards.

Purchase details & Accessories

Portable Trace Element Analyser (PTEA):
Hand held unit for the measurement of a wide range of trace elements to ppb levels in water soil supplied complete with cell stand, 10 x 35ml disposable analysis cups, reference electrode maintenance device, PC software, re-chargeable battery and charger, mains adaptor (110 or 220VAC), user manual and waterproof carrying case.

Wag-WE10800

PTEA Consumables Kit, Accessories Kit, and Standards Kit must be ordered with the PTEA.

PTEA Consumables Kit:
Sufficient for approx 200 tests for: arsenic, mercury, gold, lead, cadmium, Zinc and copper. Supplied complete with deionised water pack, HME and CLAC electrolytes, polishing kit and spare set of electrodes.

Wag-WE10820

PTEA Accessories Kit:
Comprises the following: variable micro pipette 100ul x1, variable micro pipette 1000ul x1, variable micro pipette 10ml x1, variable micro pipette 200ul tips pack of 1000, variable micro pipette 1000ul tips pack of 1000, variable micro pipette 10ml tips pack of 400.

Wag-WE10822

PTEA Standards Kit:
1000 ppm for: arsenic, mercury, gold, lead, cadmium, zinc and copper 100ml.

Wag-WE10824

Portable Laptop Computer: Wag-WE10830

Spare Parts: Additional cell unit with electrodes.

Wag-WE10836

Silver Reference Electrode: Wag-WE10838

Platinum Counter Electrode: Wag-WE10840

Glassy Carbon Working Electrode: Wag-WE10842

Cell Stirrer Pack: (without electrodes) Wag-WE10844

OFFICE LAB®

The Wagtech Office Lab is a self contained comprehensive water testing laboratory that combines an essential selection of portable field testing resources with every day fixed site laboratory equipment. Designed specifically to incorporate the A-Z of laboratory testing into one fully transportable unit that can be transported from site to site, room to room or office to office.

The Office Lab is ideal for emergencies and comprehensive surveys where a laboratory does not exist – or simply as a self contained unit within an existing fixed site laboratory.

The system consists of a comprehensive range of analytical and processing equipment that would normally be employed within a traditional fixed site laboratory.

The Office Lab is modular and therefore can be specified or altered to the end-users exact requirements – simply specify the tests to be carried out.

- Facilitates the complete range of water quality testing and incorporating:
- Bacteriological (coliforms, E-coli & faecal streptococci).
- Instruments for physico-chemical testing.
- Supporting Laboratory equipment and ancillary consumables, e.g. balances, steriliser etc.
- BOD & COD Testing.
- Heavy Metals Analysis for arsenic, lead etc.
- Reagent packs for Groundwater and Public Health Testing, plus more.
- Self contained, fully transportable.
- Meets WHO Guidelines for water quality.
- Can be used anywhere to replicate the services of a fixed site laboratory.

Incubator

PTEA

Tel: +44 (1635) 872929
Fax: +44 (1635) 862898/872808

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email: export@wagtech.co.uk
Web: www.wagtech.co.uk

portable water testing...

Colorimeter

Arsenator

Hotplate

Analytical Balance

pH/temp/mV Meter

Turbidity Meter

Specifications

Office Lab comprises the following components:

PTEA Portable Trace Element Analyser & consumables for testing heavy metals:	see pages 22-23
Potaflex Portable Incubator inc: membrane filtration apparatus	see page 14
Photometer 8000	see page 20
Reagents (see page 5)	
pH/Temperature meter, probe & bottles	see page 39
Conductivity/TDS meter, probe & bottles	see page 4
Portable Turbidity Meter	see page 38
Dissolved Oxygen Meter & BOD Probe	
Digital Arsenator & Reagents	see pages 16-17
Magnetic Hot Plate/Stirrer	see page 99
Electronic Balance	see page 83
Portable Steriliser	see page 12
Portable Jar tester	
Colony Counter & Hand Lens	see page 84
Lab coat	
Cod system with Dry Block Heater	see page 31
Media Pack consisting of 200 packs of pads, membranes and dry media and 200 Nutri disks for faecal streptococci analysis	
Public Health Reagent Starter Pack	see page 19
Glassware and Consumables pack: consisting of flasks beakers, burettes, sampling bottles, pipettes and measuring cylinders	

Also includes, operational Manuals, WHO Guidelines, Water Quality Reporting Sheets. All packed in a custom built storage/transport unit.

Purchase details

Office Lab:
Fully complete and supplied in a robust storage/transport unit.

Wag-WE10900

Accessories

Laptop Computer:	Wag-WE10910
Media Refill Pack:	Wag-WE10914
Glassware & Consumables Pack:	Wag-WE10918
Public Health Reagent Starter Pack:	Wag-WE10730
Groundwater Reagent Starter Pack:	Wag-WE10740

PTEA Consumables (see page 23)

WHO Drinking Water Quality Guidelines Cross-Reference List

Parameter	WHO Guide Line Value (GLV)	Reason	Method & Choice of equipment
Faecal Coliforms	0	Health	(M.F) Potalab, Potakit, Potaflex, Potatest
Total Coliforms	0	Health	(M.F) Potalab, Potakit, Potaflex, Potatest
Faecal Streptococci	0	Health	(M.F) Potalab, Potakit, Potaflex, Potatest
Colour	15 TCU	Appearance	Wagtech Photometer or Colour Comparator
Conductivity	N/A		Wagtech Conductivity Meter
pH	N/A	<8 for effective Chlorination	Wagtech pH Meter
Turbidity	<5ntu	Aesthetic (Effective Disinfection)	Wagtech Turbidity tube/meter
Chlorine	5mg/1	Health (600-1000µg/1 Taste & Odour)	Wagtech Photometer or Colour Comparator
Nitrate	50mg/L (as NO3)	Health	Wagtech Photometer or Colour Comparator
Nitrite	3mg/1 (as NO_2)	Health	Wagtech Photometer or Colour Comparator
Iron	0.3mg/L	Aesthetic	Wagtech Photometer or Colour Comparator
Fluoride	1.5mg/L	Health	Wagtech Photometer
Arsenic	0.01mg/L	Health	Wagtech Arsenator
Aluminium	0.2mg/L	Aesthetic	Wagtech Photometer or Colour Comparator
Copper	2.0mg/L	Health (1mg/1-Laundry Staining)	Wagtech Photometer or Colour Comparator
Lead	0.01mg/L	Health	Wagtech PTEA and AAS
Manganese	0.5mg/L	Aesthetic/Health	Wagtech Photometer
Chromium	0.05mg/L	Health	Wagtech PTEA and AAS
Mercury	0.001mg/L	Health	Wagtech PTEA and AAS
Selenium	0.01mg/L	Health	Spectrophotometry and AAS
Cyanide	0.07mg/L	Health	Spectrophotometry
Organics	-		Gas Liquid Chromatography

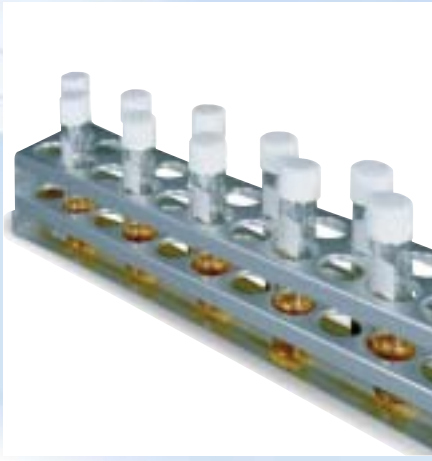
See pages 113 to 116 for more information on field-based training courses and a full list of useful reference books and resource material.

BOD
Toxicity
COD

Biological Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) tests are vital for measuring the degree of contamination within a water supply and for assessing the performance of a treatment plant. Toxicity testing indicates the effect any pollutant in the water may have on organisms.

Included within this section is a range of BOD and COD testing equipment that conforms to accepted laboratory standards.

The portable Eclox System offers a unique approach for the rapid assessment of a wide range of toxic substances in a single process.



BIOLOGICAL OXYGEN DEMAND (BOD)

Biological Oxygen Demand is the amount of oxygen used by micro-organisms when they bio-degrade organic material in a water sample. It is used as an important measure of the degree of contamination in a supply. Wagtech offers two main systems for determining BOD the 'standard' and merc free systems.

- 6 or 10 station system
- Simple handling
- Direct reading of BOD in mg/L
- Maintenance free, integral programmable stirrer

Standard BOD System

The standard BOD system comprises 6 or 10 bottles and 6 or 10 mercury capillary tubes with a constant scale of up to 1000mg/L.

This allows exact and error free readings of the BOD value to be read directly in mg/L or to be calculated by single multiplication.

Purchase details

BOD Standard System:
Each system is supplied complete with either 6 or 10 of the following: dark glass 500ml bottles, PVC caps, capillary caps, KOH containers, interchangeable scales, mercury (2ml bottles), 35 mm magnetic stirrer bars and an operation manual.

Wagtech Standard 6 bottle BOD System:	Wag-WE20010
Wagtech Standard 10 bottle BOD System:	Wag-WE20020
Wagtech Standard 6 bottle Spares Kit:	Wag-WE20030
Wagtech Standard 10 bottle Spares Kit:	Wag-WE20040

WAGTECH BOD SENSOR SYSTEM

Wagtech BOD Merc free Sensor System

Innovative electronic pressure measuring system for BOD determinations using manometric technique.

- Micro-processor controlled.
- Mercury Free.
- Ergonomic sensor design developed and optimised for simple use, easy reading and data retrieval.
- Inductive stirring mechanism.

BIOLOGICAL OXYGEN DEMAND (BOD)

- Corrosion resistant design
- Compact size which allows placement 6 or 10 BOD bottles in reduced space
- Two sided embedded handles allow easy placement and removal of equipment
- Fully robust stirring motor

How the Merc-Free System works

The Merc-Free instrument is pushed over the BOD bottle having first placed two NaOH tablets into the special bung. The reaction of the tablets with the air vapour causes an increase in pressure which is measured by the instrument and converted into mg/1 on the display.

BOD Merc-Free Sensor System 6 & 10

The wagtech BOD Sensor System 6 and 10 are composed by a 6 or 10 place stirring group with 6 or 10 BOD sensor units, 6 or 10 alkali holders for carbon dioxide absorption , and 6 or 10 stirring bars, offering users a complete measuring system for BOD values within four scales.

Specifications

BOD Merc Free Sensor System

Measurement Principle	Manometric using pressure sensor
Display	Digits 3 LED, 7mm high
Memorised Data	5 BOD values at 24hr intervals
Scales	90,250,600,999 ppm BOD Higher values, after dilution
Power Supply	2 lithium battery (250mAh) (up to 2 yrs life)
Safety Class	3 IEC 1010
Protection Degree	IP 44 IEC 529
Admitted Storing Temperature	-25 to +65°C
Weight	80g

Purchase details

BOD Merc Free Sensor 6 & 10 System:

Wagtech BOD Sensor System 6: Wag-WE20050

Wagtech BOD Sensor System 10: Wag-WE20060

Wagtech BOD Sensor System 6: spare parts kit Wag-WE20070

Wagtech BOD Sensor System 10: spare parts kit Wag-WE20080

WAGTECH INCUBATORS

Wagtech offers two sizes of BOD incubators for 1 or 2 BOD systems. All models are suitable for use with the standard or Merc-Free systems. Air circulation within the incubators ensures an even temperature throughout.

Wagtech 90 Litre Incubators

These three small dimension refrigerating incubators have been built purposely for the incubation of manometric BOD measurement units; allowing 1, 6 or 10 bottle system to be incubated.

Wagtech 220 Litre Incubators

These two complete and advanced incubators are intended for any use which requires precise and constant temperature. The continuous internal air circulation and the thermostating microprocessor controlled Auto-Tuning system allows a uniform temperature within the internal chamber.

Specifications

Dedicated 90L BOD Incubator	
Thermostat Value	20°C ±0.5
Power Supply	220-240v, 50-60Hz
Controllable 90L Incubator with RS232	
Temperature Settings	3 to 50°C
Temperature Homogeneity	±0.5°C (air)
Stability	±0.5°C (air)
Temperature Resolution	0.1°C
Power Supply	220-240v, 50-60Hz
Controllable 90L Incubator with RS232 & glass door	Same specifications as previous model but with glass door.

Purchase details

Wagtech 90 Litre BOD Incubators:

Dedicated 90L BOD incubator: Wag-WE20100

Controllable 90L incubator with RS232:
A dedicated software compatible with Windows operating system can be available upon request allowing to connect to a PC via an RS232 port.

Wag-WE20110

Controllable 90L incubator with RS232 and glass door:

Wag-WE20120

Specifications

Wagtech 220 Litre Incubators	
Temperature Settings	3 to 50°C
Temperature Homogeneity	±0.5°C (air)
Stability	±0.5°C (air)
Temperature Resolution	0.1°C
Display	LCD
Power Supply	220-240v, 50-60Hz

Purchase details

Wagtech 200 Litre Incubators:
Fully complete with two RS232 ports allowing incubators to be connected to a PC.

Controllable 220L incubator with RS232: Wag-WE20130

Controllable 220L incubator with RS232:
Also comes complete with a glass door, adjustable internal shelves and an internal chamber free from condensation and moisture.

Wag-WE20140

CHEMICAL OXYGEN DEMAND (COD)

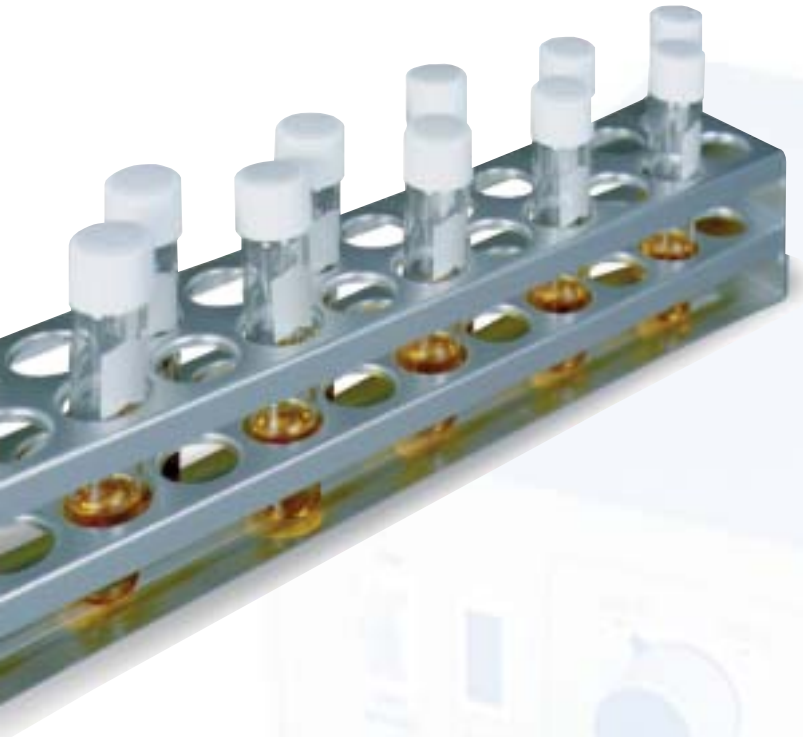
Wagtech Chemical Oxygen Demand System

Chemical Oxygen Demand (COD) is a vital test for assessing the quality of water. The COD predicts the oxygen requirement of the water and is used for the monitoring and control of discharges and for assessing treatment plant performance.

The Wagtech COD System:

- Carries out tests quickly and effectively.
- Offered in four ranges from 5mg/1 to 20,000mg/1.
- Allows 24 tubes to be digested at the same time.
- Reagents comply and meet international standard methods and requirements.

The Wagtech COD System offers a method which is both practical and convenient. The reagents are supplied pre-mixed and pre-dispensed into borosillicate glass test tubes. The test is simply carried out by adding 2ml of sample to the tube, closing the cap and then digesting for two hour sat 150°C. The tubes are then cooled and the sample is measured using a Wagtech Photometer.



Purchase details

Wagtech COD System:
Supplied complete with COD Dry-block heater, safety screen, test tube rack, wagtech Digital Photometer 5000, adaptor, thermometer and micropipettor. An optional rugged carrying case is available should the system need to be taken to remote areas.

Wagtech COD System: (for use with 220/240v 50Hz)	Wag-WE20200
Wagtech COD System: (for use with 110/120v 50Hz)	Wag-WE20220

Accessories

Rugged carrying case:	Wag-WE20230

COD System Packs:
Mercury-Free (packs of 24 tubes)

5-150 mg/1 range	Wag-WE20232
20-400 mg/1 range	Wag-WE20234
50-2000 mg/1 range	Wag-WE20236
500-20,000 mg/1 range	Wag-WE20238

COD System Packs:
With Mercuric Sulphate (packs of 24 tubes)

5-150 mg/1 range	Wag-WE20240
20-400 mg/1 range	Wag-WE20242
50-2000 mg/1 range	Wag-WE20244
500-20,000 mg/1 range	Wag-WE20246

ECLOX

Rapid Water Purity Testing

Developed from a kit (Designed by Severn Trent Water) and in use by the armed forces throughout the world. This Eclox test kit is now available for water and sanitation engineers to give a rapid indication of the toxicity levels present at the water source. The heart of the Eclox is a luminometer which gives a generic identification of the toxicity of a water sample.

Applications:

- The kit can provide a rapid indication of water quality (4 minutes).
- On-site detection of contamination.
- Pollution incident tracking.
- Emergency Pollution Response Kit.
- World wide field water evaluation.
- Chemicals from urine, faeces, phenols, amines, heavy metals, cyanide and many other toxic substances are all rapidly detected.

Features:

- Rapid detection of contaminated water.
- Reliable indicator of relative water quality.
- Sensitive to heavy metals and poisons.
- Easy to use with minimum of training.
- Robust, washable and totally portable.
- Completely self contained.
- Use in a wide range of environmental conditions.

Specifications

Dimensions	489mm X 400mm X 200mm
Weight	6.5 Kg fully loaded
Temperature	Tested from -20°C to +55°C (-4°F to 131°F) (-58°F to 158°F) for outside
Batteries	4 X AA to +50°C
Battery Life	Greater than 250 tests
Consumables Shelf Life	2yrs at ambient temperature
Data Logging	Up to 60 tests recorded in full detail

Purchase details

Eclox Toxicity Kit
Supplied with luminometer, micropipettes, tips, sampling bottles, set of 7 chemiluminescence reagents and pesticide strips.
Wag-WE20250

Set of 7 chemiluminescence reagents. Wag-WE20254

Pack of 25 pesticide strips. Wag-WE20258

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digital INSTRUMENTATION

A comprehensive range of digital instrumentation for water analysis and the monitoring and control of pH, Conductivity, Total Dissolved Solids (TDS), Temperature, Ion Concentration, Redox Potential (ORP) and Dissolved Oxygen.

The range comprises:

Pocket Sized Testers
The Pocket Scan series comes in standard and waterproof versions that allow for fast accurate measurement and are simple to use.

Economy Palm Top Meters
The Palm Scan series is a hybrid of the Pocket Scan Testers and the Hand Scan series of hand-held meters incorporating advanced features at an economical price.

Standard / Waterproof Hand-held Meters
The deluxe Hand Scan series of microprocessor-based meters provide many advanced features that offer flexibility through user driven customised functions, whilst maintaining a user-friendly interface.

Laboratory Bench Meters
The Bench Scan series of bench meters have advanced yet user-friendly features to meet the requirements of most water testing laboratories. These microprocessor based meters provide a high level of sophistication with unparalleled flexibility through set-up functions and customised options – all at the push of a button.

pH MEASUREMENT

WG pHScan 1

	WG pHScan 1
Range	0.00 to 14.99 pH
Resolution	0.01 pH
Accuracy	±0.02 pH
Calibration	Up to 3 points (USA: pH 4.01, 7.00 10.01 or NIST: pH 4.01, 6.86, 9.18)
ATC	No

- Hand held, easy to use, measures 0.00-14.99 pH .
- Waterproof.
- Auto-buffer recognition with choice of USA or NIST pH buffer standards.
- Push-button calibration, HOLD function, Auto-off, and self-diagnostic features.
- Supplied complete with interchangable electrode with BNC connector.

Purchase details

WG pHscan 1Pocket Meter

Wag-WE30000

WG pHScan 2

	WG pHScan 2
Range	-1.0 to 15.0 pH
Resolution	0.1 pH
Accuracy	±0.1 pH
Calibration	Up to 3 points (4.0, 7.0, 10.0)
ATC	Yes

- Hand held, easy to use, measures -1.0-15.0 pH.
- Waterproof.
- Auto-buffer recognition.
- Push-button calibration, Self-diagnostic messages, HOLD function, Auto-off.
- Includes Automatic Temperature Compensation.

Purchase details

WG pHScan 2 Pocket Meter

Wag-WE30010

COMBINED pH & TEMPERATURE

WG pHScan 3

	WG pHScan 3
Range	0.00 to 15.00 pH
Resolution	0.01 pH
Accuracy	±0.02 pH
Calibration	Up to 3 points (USA: pH 4.01, 7.00 10.01 or NIST: pH 4.01, 6.86, 9.18)
Temperature Display	Yes (0.0 to 55.0°C)

- Measures pH and Temperature, simple to use and waterproof.
- ±0.02 pH accuracy.
- Temperature(°C) readout is suitable for most ASTM and EPA test procedures.
- Double junction electrode - ideal for dirty water, heavy metals, sulfides, and organics.
- Cost effective replaceable sensors.
- Auto-buffer recognition with choice of USA or NIST pH buffer standards.
- Push-button calibration, Self-diagnostic messages, HOLD function, Auto-off, and Automatic Temperature Compensation.

Purchase details

WG pHScan 3 Pocket Meter

Wag-WE30020

SALINITY TESTING

WG SaltScan 4

	WG SaltScan 1
Range	10.00 ppt
Resolution	0.10 ppt
Accuracy	± 2% full scale
Calibration	1 point push-button
Adjustable TDS Factor	0.4 to 1.0

- Hand held, waterproof and simple to use.
- ±2% full scale accuracy.
- Replaceable 2-pin dip-type sensor allows reuse of meter many times, saving money
- Push-button calibration, HOLD function, Auto-off and Self-diagnostic feature.
- Automatic Temperature Compensation.

Purchase details

WG SaltScan 4 Pocket Meter

Wag-WE30030

CONDUCTIVITY & TEMPERATURE

WG ConScan 5

	WG ConScan 5
Range	1999 µS/cm
Resolution	1 µS/cm
Accuracy	± 1% full scale
Calibration	1 point push-button
TDS Factor	–
Temperature Display	Yes; Range: -5.0 to 55.0°C; Resolution: 0.1°C; Accuracy: ±0.5°C
Temperature Calibration	±5.0 °C (0.1°C increments)

- Measures Conductivity and Temperature in one easy to use instrument.
- Cup-type sensor scoops or dips into samples for greater flexibility.
- Replaceable sensor allows reuse of meter many times, saving money.
- Includes Push-button calibration, HOLD function, Auto-off and Self-diagnostic features.
- Waterproof, dustproof and incorporates Automatic Temperature Compensation.

Purchase details

WG ConScan 5 Pocket Meter Wag-WE30040

CONDUCTIVITY & TDS

WG ConScan 6/TDS Scan 6

- Measures Conductivity and TDS in one easy to use instrument.
- Replaceable 2-pin dip-type sensor allows reuse of meter many times, saving money.
- Adjustable TDS factor (for TDScan High and Low) from 0.4 to 1.0 to suit different solution species.
- Push-button calibration, HOLD function, Auto-off and Self-diagnostic feature.
- Automatic Temperature Compensation.

	ConScan 6 High	ConScan 6 Low	TDS Scan 6 High	TDS Scan 6 Low
Range	19.90 mS/cm	1990 µS/cm	10.00 ppt	1990 ppm
Resolution	0.10 mS/cm	10 µS/cm	0.10 ppt	10 ppm
Accuracy	± 1% full scale		± 1% full scale	
TDS Factor	n.a.		0.4 to 1.0 (user selectable)	
Calibration	1 point-push button		1 point push-button	

Purchase details

WG ConScan High 6 Pocket Meter	Wag-WE30050
WG ConScan Low 6 Pocket Meter	Wag-WE30060
WG TDS Scan High 6 Pocket Meter	Wag-WE30070
WG TDS Scan Low 6 Pocket Meter	Wag-WE30080

pH MEASUREMENT

digital instruments... hand held economy range

WG PalmScan pH 1

	pH	Temperature	mV or Rel mV
Range	0.01 to 14.00 pH	0.0 to 100.0°C	±1000 mV
Resolution	0.01 pH	0.1 °C	1 mV
Accuracy	0.01 pH	±0.5°C	±2 mV
Calibration	Up to 3 points (min 2)	±5.0°C (0.1°C increments)	±50mV (0.1 mV increments)

- Portable meter measuring pH, Temperature and mV.
- Very economical, low cost but high performance in pH accuracy and resolution.
- mV measurement mode is useful for ORP measurements.
- Multi-point calibration (up to 3 points).
- Push-button calibration, self-diagnostic messages, Hold function, Auto-off feature.
- Can be used with most electrodes for various specific applications.
- Supplied complete with pH electrode, carrying kit and calibration standards and temperature probe.

Purchase details

WG PalmScan pH 1 Economy Handheld Meter:
pH/mV/°C

Wag-WE30100

WG PalmScan pH 2

- Economical multi-parameter instrument for Ion concentration (ppm), pH, mV and temperature in one single meter.
- Multi-point Ion and pH calibration (up to 3 points) with choice of USA, NIST and Low-ionic pH buffer standards.
- Push-button calibration, HOLD function, Auto-off and Self-diagnostic feature.
- Use with virtually all ion selective electrodes (with BNC connector).
- Supplied complete with pH electrode, carrying kit and calibration standards and temperature probe.

Purchase details

WG PalmScan pH 2 Economy Handheld Meter:
pH/Ion/mV/°C

Wag-WE30120

	Ion	mV	pH	Temperature
Range	0.01 to 1999 ppm	±500 mV	0.00 to 14.00 pH	0.0 to 100.0°C
Resolution	0.01 ppm (0.01 to 0.99 ppm) 0.1 ppm (1.0 to 199.9 ppm) 1 ppm (200 to 1999 ppm)	0.1 mV (within±199.9 mV) 1 mV (beyond ±200 mV)	0.01 pH	0.1°C
Accuracy	± 1% full scale	±0.2 mV (within ±199.9 mV) ±2mV (beyond ±200 mV)	±0.01 pH	±0.5°C
Calibration	Up to 3 points (min 2)	–	Up to 3 points (USA, NIST or Low-ionic pH buffer options)	±5.0°C (0.1°C increments)

Tel: +44 (1635) 872929
Fax: +44 (1635) 862898/872808

wagtech INTERNATIONAL

email: export@wagtech.co.uk
Web: www.wagtech.co.uk

CONDUCTIVITY/TDS

WG HandScan CON 1

- Hand held meter for measuring Conductivity/TDS.
- Single and Multi-point automatic or manual calibration.
- Automatic/manual temperature compensation from 0 to 100°C
- User adjustable TDS factor.
- Hold, power-off and self-diagnostic message functions.
- Rugged, splash-proof design.
- Supplied complete with carrying kit with calibration standards and rinse bottle, conductivity electrode with ATC.

	Conductivity	TDS	Temperature
Range	0 to 19.99, 20 to199.9, 200 to1999 µS/cm; 2.00 to 19.99, 20.0 to 199.9 mS/cm	0 to 9.9, 10 to 99.9, 100 to 999 ppm; 1.00 to 9.99, 10.0 to 99.9ppt	-10 to 110°C
Resolution	0.01, 0.1, 1µS; 0.01, 0.1mS	0.01, 0.1, 1ppm; 0.01, 0.1ppt	0.1 °C
Accuracy	±0.2, 2, 20µS/cm; ±0.2,2mS/cm	±0.1, 1, 10ppm; ±0.1, 1ppt	±0.5°C
Calibration	up to 5 points (1 per range)		–
TDS Factor	-	0.40 to 1.00	–

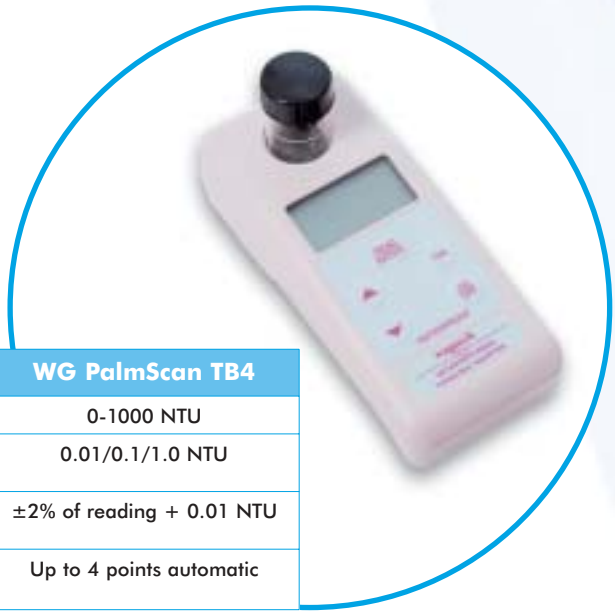
Purchase details

WG HandScan CON1 Handheld Meter: Conductivity/TDS

Wag-WE30210

TURBIDITY

WG PalmScan TB4



	WG PalmScan TB4
Range	0-1000 NTU
Resolution	0.01/0.1/1.0 NTU
Accuracy	±2% of reading + 0.01 NTU
Calibration	Up to 4 points automatic

- Hand held waterproof turbidity meter.
- Auto-ranging up to 1000 NTU.
- Multi-point automatic calibration (up to 4 points).
- Self-diagnostic messages, quick stable responses and maintenance-free.
- Infra-Red light source.
- Supplied with calibration kit and carrying case.

Purchase details

WG Palmscan TB4 Economy Handheld Turbidity Meter

Wag-WE30140

pH MEASUREMENT

WG HandScan pH 1

- Handheld pH meter for measuring pH, mV and Temperature
- Multi-point pH calibration (up to 5 Points) with USA pH buffer standards.
- Auto buffer recognition with multi-point pH calibration for hassle-free operation.
- Non-volatile memory stores and recalls up to 100 sets of pH and mV.
- Self-diagnostic messages, Electrode diagnosis, Ready indicator and Auto-off.
- Supplied complete with pH electrode, and temperature probe.

	pH 1	mV or Rel mV	Temperature
Range	-2.00 to 16.00pH	± 1999 mV (Extended)	-10 to 110°C
Resolution	0.01 pH	0.1 mV (within ±199.9mV) 1mV (beyond ±199.9 mV)	0.1 °C
Accuracy	±0.01 pH	±0.2 mV (within ±199.9mV) ±2mV (beyond ±199.9 mV)	±0.5 °C
Calibration	up to 5 points	–	±5.0 °C (0.1 ° increments)

Purchase details

WG HandScan pH 1 Handheld Meter:
pH/mV/°C
Wag-WE30200

WG HandScan pH 2

- Compact and rugged waterproof meter for measuring pH, mV, Relative mV and Temperature.
- Non-volatile memory stores and recalls up to 50 sets of pH, mV or relative mV readings with temperature (°C/°F).
- Real-time clock stamps stored data and calibration data with date/time.
- Multi-point pH calibration (up to 6 points) with Auto-buffer recognition for choice of USA, NIST, and DIN pH buffer standards.
- Advanced setup allows you to customise meter parameters where required.
- Stylish and practical design.
- Self-diagnostic messages, Ready Indicator, Auto-hold function, Auto-off features.
- Supplied with double junction pH electrode and temperature probe.

	pH	mV or Rel mV	Temperature
Range	-2.00 to 16.00 pH	±2000 mV	0.0 to 100.0 °C 32 to 212 °F
Resolution	0.01 pH	0.1 mV (within ±199.9mV) 1 mV (beyond ±200 mV)	0.1 °C; 0.1 °F
Accuracy	± 0.01 pH	±0.2 mV (within ±199.9mV) ±1 mV (beyond ±200 mV)	± 0.3 °C; ±0.5 °F
Calibration	up to 6 points	± 150 mV (1 mV increments)	± 5.0 °C; ±9.0°F (0.1 ° increments)

Purchase details

WG HandScan pH 2 Handheld Meter:
pH/mV/Rel mV/°C/°F
Wag-WE30220

digital instruments... hand held waterproof

CONDUCTIVITY/TDS

WG HandScan CON 3

- Multi parameter waterproof instrument for measuring Conductivity, Temperature and TDS.
- Stores and recalls up to 50 sets of readings.
- Real-time clock stamps stored data and calibration data with time/date ideal for Good Laboratory Practice (GLP)
- Multi-point calibration for unprecedented full-range accuracy.
- Advanced setup allows you to customise meter parameters.
- Self-diagnostic messages, HOLD function, Ready indicator, Auto-off features.
- Supplied with carrying case with bottles and calibration standards and conductivity electrode.

	Conductivity	TDS	Temperature
Range	0 to 19.99, 199.9, 1999 µS/cm 0 to 19.99, 199.9 mS/cm	0 to 9.99, 99.9, 999.9 ppm; 9.99, 99.9 ppt, max of 199.9 ppt (based on factor setting)	0.0 to 100.0°C; 32.0 to 212°F
Resolution	0.01, 0.1,1 µS/cm; 0.01, 0.1 mS/cm	0.01, 0.1, 1 ppm; 0.01, 0.1,1 ppt	0.1°C, 0.1°F
Accuracy	±1% full scale		±0.3°C; ±0.5°F
Calibration	5 points (1 per range)		±5.0°C; ±9.0°F (0.1°C increments)

Purchase details

WG HandScan Con 3 Handheld Meter
Conductivity/TDS/°C/°F
Wag-WE30230

DISSOLVED OXYGEN

WG HandScan OXY 4

- Multi parameter waterproof instrument for measuring Dissolved Oxygen and Temperature.
- Non-volatile memory stores and recalls up to 50 sets of DO readings (mg/1 or ppm or % saturation) with temperature (°C/°F).
- Real-time clock stamps stored data and calibration data with time/date ideal for GLP.
- Advanced setup allows you to customise meter parameters view calibration data, electrode diagnosis etc.
- Automatic Compensation for salinity and barometric pressure.
- Self-diagnostic messages, HOLD function, Ready indicator, Auto-off features.
- Supplied with carrying kit and bottles for solution, submersible DO probe and DO probe maintenance kit.

	mg/1 (ppm)	% saturation	Temperature
Range	0.00 to 20.00 mg/1 (ppm)	0.0 to 200%	0 to 100.0°C; 32.0 to 212°F
Resolution	0.01 mg/1 (ppm)	0.1%	0.1°C; 0.1°F
Accuracy	±1.5% full scale	±1.5% full scale	±0.3°C; 0.5°F
Calibration	1 point (100% air saturation or in air saturated water); plus separate mg/1 (ppm) offset		±5.0°C; ±9.0°F (0.1° increments)

Purchase details

WG HandScan OXY 4 Handheld Meter
Dissolved Oxygen/°C/°F
Wag-WE30240

CONDUCTIVITY, TDS & TEMPERATURE

WG HandScan 5

	pH	Conductivity	TDS	Temperature
Range	-2.00 to 16.00 pH	0.00 to 19.99, 199.9, 1999 µS/cm	0.00 to 9.99, 99.9, 999 ppm, 9.99, 99.9, 199 ppt (depending on factor setting)	0 to 100.0°C; 32.0 to 212°F
Resolution	0.01 pH	0.01, 0.1 1µS/cm; 0.01, 0.1mS/cm	0.01, 0.1,1 ppm; 0.01, 0.1 ppt	0.1°C; 0.1°F
Accuracy	± 0.01 pH	±1% full scale + 1 digit		±0.3°C; ±0.5°F
Calibration	Up to 5 points (pH 1.68, 4.01, 7.00, 10.01, 12.45)	Up to 5 points (1 per range)		±5.0°C; ±9.0°F (0.1° increments)

- Multi-parameter waterproof instrument for pH, Conductivity, TDS and temperature (°C or °F) in one single meter.
- Advanced setup allows you to customise meter parameters like Temperature Coefficient (0 to 10%/°C) TDS factor 0.4 to 1.0), Normalisation Temperature (15 to 30°C) and to view calibration points for pH and Conductivity/TDS, electrode diagnosis etc.
- Auto-ranging Conductivity/TDS measurements; Auto-buffer recognition for pH calibrations.
- Self-diagnostic messages, HOLD function, Ready indicator, Auto-off features.
- Supplied with carrying kit and calibration standards, pH and Conductivity electrodes.

Purchase details

WG HandScan 5 Handheld Meter
pH/Conductivity/TDS/°C/°F
Wag-WE30250

DISSOLVED OXYGEN & TEMPERATURE

WG HandScan 6

	pH	mg/1 (ppm)	% saturation	Temperature
Range	-2.00 to 16.00 pH	0.00 to 20.00 mg/1 (ppm)	0.0 to 200.0%	-10 to 110.0°C; 14.0 to 230°F
Resolution	0.01 pH	0.01 mg/1 (ppm)	0.1%	0.1°C; 0.1°F
Accuracy	± 0.01 pH	±1.5% full scale + 1 digit		±0.3°C; ±0.5°F
Calibration	Up to 5 points (pH 1.68, 4.01, 7.00, 10.01, 12.45)	1 point (100% air saturation or in air saturated water); plus separate mg/1 (ppm) offset		±5.0°C; ±9.0°F (0.1° increments)

- Multi-parameter waterproof instrument for pH, Dissolved Oxygen, and temperature (°C or °F) in one single meter.
- Advanced setup allows you to customise meter parameters.
- Adjustable backlit contrasted display for easy viewing in dimly lit areas.
- Auto-buffer recognition for pH calibration; independent 100% and 0% adjustment calibration for DO.
- Self-diagnostic messages, HOLD function, Ready indicator, Auto-off features.
- Supplied with carrying kit and calibration standards, Galvanic DO probe ATC, pH electrode and DO probe maintenance kit.

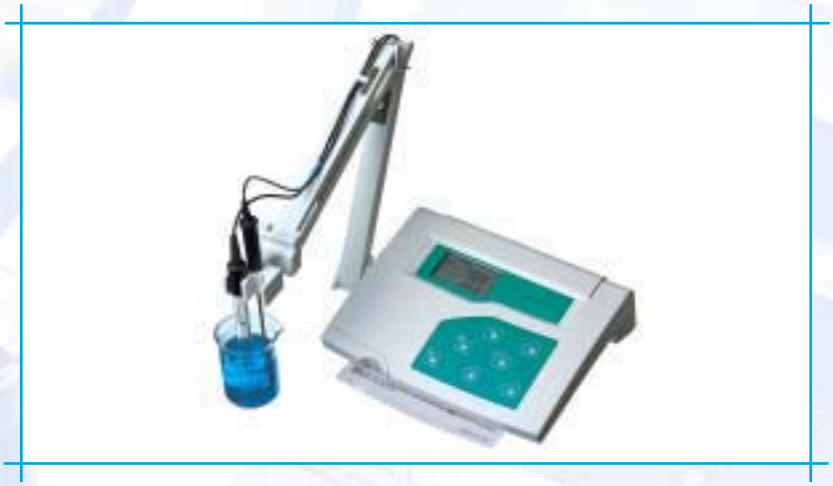
Purchase details

WG HandScan 6 Handheld Meter
pH/Dissolved Oxygen/°C/°F
Wag-WE30260

digital instruments...
hand held waterproof

pH MEASUREMENT

WG BenchScan pH 1



- Low cost but high performance meter for measuring pH, mV and Temperature.
- 0.1 mV resolution – useful for Ion concentration and ORP measurements.
- Multi-point pH calibration (up to 3 points).
- Non-volatile memory stores and recalls 50 data sets of pH and mV readings with temperature.
- Recorder output to link chart recorder or recording device for data analysis.
- Electrode slope/offset diagnosis, self-diagnostic messages, Ready indicator, and slide-out reference card.
- Supplied with pH electrode, integral electrode holder and temperature probe.

	pH	mV	Temperature
Range	0 to 14.00 pH	± 2000 mV	0.0 to 100.0 °C
Resolution	0.01 pH	0.1 mV (within ±199.9mV) 1mV (beyond ±200 mV)	0.1 °C
Accuracy	± 0.01 pH	±0.2 mV (within ±199.9mV) ±2mV (beyond ±200 mV)	±0.3 °C
Calibration	up to 3 points (USA or NIST pH buffer options)	±150 mV (1mV increments)	± 5.0 °C (0.1 ° increments)

Purchase details

WG BenchScan pH 1Economy Bench Meter
pH/mV/°C
Wag-WE30300

CONDUCTIVITY/TDS

WG BenchScan CON 2

- Bench meter for measuring Conductivity and TDS with Auto-ranging capability for fast response, with ±1% full scale accuracy.
- Up to 1- or 5-point automatic or manual calibration.
- Non-volatile memory stores and recalls up to 50 data sets of Conductivity, TDS readings with temperature (°C/°F).
- Advanced setup allows you to customise meter parameters.
- Supplied with Conductivity electrode (k=1), and integral electrode holder.

	Conductivity	TDS	Temperature
Range	0 to 19.99, 199.9, 1999 µS/cm 0 to 19.99, 199.9 mS/cm	0 to 9.99, 99.9, 999.9 ppm; 9.99, 99.9 ppt, max of 199.9 ppt (depending on factor setting)	-10 to 110.0°C 14.0 to 230°F
Resolution	0.01, 0.1,1 µS/cm; 0.01, 0.1 mS/cm	0.01, 0.1, 1 ppm; 0.01, 0.1,1 ppt	0.1°C, 0.1°F
Accuracy	±1% full scale + 1 digit		±0.3°C; ±0.5°F
Calibration	5 points (1 per range)		±5.0°C; ±9.0°F (0.1°C increments)

Purchase details

WG BenchScan CON 2 Bench Meter
Conductivity/TDS/°C/°F
Wag-WE30320

pH/CONDUCTIVITY/TDS MEASUREMENT

WG BenchScan 3

- Multi-parameter instrument for pH, Conductivity, TDS, mV and temperature (°C/°F) with Auto-ranging capability for Conductivity/TDS measurements.
- Multi-point Conductivity or TDS calibration and pH calibration (up to 5 points) with auto-buffer recognition.
- Advanced setup allows you to customise a number of parameters.
- Supplied with pH electrode, conductivity electrode and integral electrode holder.

Purchase details

WG BenchScan 3 Bench Meter
pH/Conductivity/TDS/mV/°C/°F
Wag-WE30330

	pH	mV	Conductivity	TDS	Temperature
Range	-2.00 to 16.00 pH	±600 mV	0.00 to 19.99, 199.9, 1999 µS/cm; 19.99, 199.9 mS/cm	0.00 to 9.99, 99.9, 999 ppm, 9.99, 99.9, 199 ppt (depending on factor settings)	-10 to 110.0°C; 14.0 to 230°F
Resolution	0.01 pH	0.1 mV (within ±199.9 mV) 1 mV (beyond ±200 mV)	0.01, 0.1,1 µS/cm; 0.01, 0.1 mS/cm	0.01, 0.1,1 ppm; 0.01, 0.1 ppt	0.1°C; 0.1°F
Accuracy	± 0.01 pH	±0.2 mV (within ±199.9 mV) ±2 mV (beyond ±200 mV)	±1% full scale + 1 digit		±0.3°C; ±0.5°F
Calibration	Up to 5 points (USA, NIST pH buffer options)	–	Up to 5 points (1 per range)		±5.0°C; ±9.0°F (0.1° increments)

WG BenchScan 4

- Research-grade, multi-parameter bench meter for measuring pH, Ion, mV and Temperature.
- Multi-point pH calibration (up to 5 points) with Auto-buffer recognition.
- Features Auto calibration prompts, Windows based Software, GLP, LCD display, self-diagnostic messages, slide-out reference card, and memory storage for up to 100 sets of data.
- Supplied with pH electrode, temperature probe and integral electrode holder.

Purchase details

WG BenchScan 4 Bench Meter
Ion/pH/mV/Rel mV/°C/°F/RS232
Wag-WE30340

	pH	Ion	mV	Temperature
Range	-1.000 to 14.000 pH	0.001 to 19999 ppm	-1850 to +1850 mV	-5.0 to 105.0 °C (23.0 to 221.0 °F)
Resolution	0.01/0.001 pH	±1 LSD	0.1 mV	0.1 °C; 0.1 °F
Accuracy	± 0.01/0.002 pH	±0.5% of reading	±0.2 mV	±0.5 °C (9.0 °F)
Calibration	Up to 5 points	2 to 5 points	Offset up to ±150 mV	± 5.0 °C; ±9.0 °F (0.1 ° increments)

DISSOLVED OXYGEN

WG BenchScan DO5

- Measures Dissolved Oxygen in % saturation, ppm and mg/l.
- Performs Biological Oxygen Demand (BOD).
- Automatic calibration at100% and independent 0% calibration enhances sensitivity for low oxygen measurement.
- Automatic compensation after manual input of barometric pressure and salinity values for variations in oxygen solubility to ensure optimum results.
- Includes a self-stirring polarographic BOD probe.

DO Range (mg/L and ppm)	0-60ppm (mg/L)
Resolution (mg/L and ppm)	0.01ppm (mg/L)
DO Range (% saturation)	0-600%
Resolution (% saturation)	0.10%
Accuracy	±0.1% + 1 LSD
Display	105 x 75mm (screen size) custom LCD with contrasted background
Inputs & Output	BNC, power socket, DIN (DO) & bi-directional RS232
Power Supply	220V ac, centre negative

Purchase details

WG BenchScan DO5 Bench Meter
pH/Dissolved Oxygen/°C/°F — Wag-WE30245

TURBIDITY

WG BenchScan TB6

- Research grade bench turbidity meter.
- White / Infra-Red light sources available.
- Auto-ranging up to 1000 NTU.
- Up to 3-points push-button automatic calibration.
- Auto-calibration prompt and self-diagnostic messages.
- RS232 Interface.
- Built in real-time clock for Good Laboratory Practice (GLP).
- Supplied with calibration kit.

	Turbidity NTU
Principle	Nephelometric non-ratio
Range	0 to 1000 NTU
Resolution	0.01 / 0.1 / 1.0 NTU
Accuracy	±2% of reading +0.01 NTU
Calibration	Automatic (up to 3-points)

Purchase details

WG BenchScan TB6 Bench Meter, Infra-Red — Wag-WE30350

WG BenchScan TB6 Bench Meter, White — Wag-WE30355

Accessories
Pour-through Assembly — Wag-WE30356

Pk.3 Sample Cuvettes — Wag-WE30358

GENERAL PURPOSE PLASTIC BODY pH/ORP ELECTRODES

Economical range of reinforced-plastic body combination type electrodes with integral reference.

- Ideal for general-purpose applications in the lab or field.
- Impact resistant epoxy body.
- Provide a fast stable response, ideal for prolonged pH or ORP readings.
- Sealed gel-filled design requires virtually no maintenance.
- Temperature Range 0-60°C.

Purchase details

All electrodes are supplied with 1m of cable and a BNC plug as standard. Additional cable length and alternative plugs are available upon request. Please specify when ordering.

Epoxy Body, Single Junction pH Electrode	Wag-WE30522
Epoxy Body, Double Junction pH Electrode	Wag-WE30524
Epoxy Body, Single Junction ORP Electrode	Wag-WE30526
Epoxy Body, Double Junction ORP Electrode	Wag-WE30528

Additional Electrodes & Accessories

3-in-1 pH Temperature Combination probe	Wag-WE30516
Temperature Probe	Wag-WE30518
Carry Pouch for Handheld Meters	Wag-WE30532

LABORATORY pH ELECTRODES

Wagtech Product Code	pH Range	Temp Range	Dimensions (L x D mm)	Internal Reference Element	Junction Type	Application
Wag-WE30500	0-14	0-80°C	120 x 12mm	AgCl Refillable	Annular Ceramic	General Purpose aqueous measurements
Wag-WE30502	0-14	0-80°C	120 x 12mm	AgCl Refillable	Annular Ceramic	High Viscosity solution measurements
Wag-WE30504	0-14	0-80°C	120 x 12mm	AgCl Double Junction	Annular Ceramic	General Purpose aqueous measurements
Wag-WE30506	0-14	0-80°C	Stem 40 x 6mm	AgCl Sealed	Frit Ceramic	Spear tip for piercing. Semi-solids
Wag-WE30508	0-14	0-80°C	120 x 12mm	AgCl Sealed	Porous Teflon	Surface measurements e.g. paper & skin
Wag-WE30510	0-14	0-80°C	120 x 12mm	AgCl	Frit Ceramic	Micro-samples e.g.- cuvettes & NMR tube
Wag-WE30512	0-14	0-80°C	Stem 40 x 6mm	AgCl Sealed	Frit Ceramic	Spear tip for piercing. Semi-solids
Wag-WE30514	–	0-80°C	120 x 12mm	AgCl Refillable	Annular Ceramic	For general purpose ORP measurements. Platinum band

Range of glass-bodied combination electrodes

- Glass body.
- Able to withstand high temperatures and chemical attack.
- Exhibit minimal solution carryover.
- Refillable reference option.

Purchase details

All electrodes are supplied with 1m of cable and a BNC plug as standard. Additional cable length and alternative plugs are available upon request. Please specify when ordering.

pH, REDOX AND CONDUCTIVITY STANDARD SOLUTIONS & pH BUFFER TABLETS

Buffers and calibration solutions for pH, REDOX and Conductivity, packed in 500ml leak-proof bottles. Economical and popular for laboratory use.

Purchase details

pH Buffer Solution, pH 4, 500ml	Wag-WE30552
pH Buffer Solution, pH 7, 500ml	Wag-WE30554
pH Buffer Solution, pH 10, 500ml	Wag-WE30558
Conductivity Standard Solution, 1413µS, 500ml	Wag-WE30562
Conductivity Standard Solution, 12.88mS, 500ml	Wag-WE30564
Conductivity Standard Solution, 111.8mS, 500ml	Wag-WE30566
Redox Standard Solution, 258mV, 500ml	Wag-WE30572
Redox Standard Solution, 458mV, 500ml	Wag-WE30574

Ideal for when small amounts of buffer are required to quickly calibrate a pH meter in the laboratory or field. Distilled water is added to the tablet which dissolves to give a standard pH buffer solution.

Available in packs of 50 for pH 4, 7, and 9.

Purchase details

pH Buffer Tablets, Box 50, pH 4	Wag-WE30542
pH Buffer Tablets, Box 50, pH 7	Wag-WE30544
pH Buffer Tablets, Box 50, pH 9	Wag-WE30546

A comprehensive range of refilling electrolyte solutions, ISE calibration standards, Ionic strength adjustment buffers, replacement membranes and electrode cleaning solutions are also available.

mobile LABORATORIES...

Water and environmental surveys frequently require the analysis to be carried out in remote areas. The use of a well equipped mobile laboratory is often the ideal solution for extensive field work surveys.

Wagtech International manufactures a range of mobile laboratories designed to meet all possible requirements for rugged use in cold or tropical climates.

A wide range of products and accessories are available which makes this a flexible solution for a number of different applications.

Why not contact us for a comprehensive design service covering preliminary advice, equipment specification, layout design, delivery and installation.

MOBILE TRAILER LABORATORY

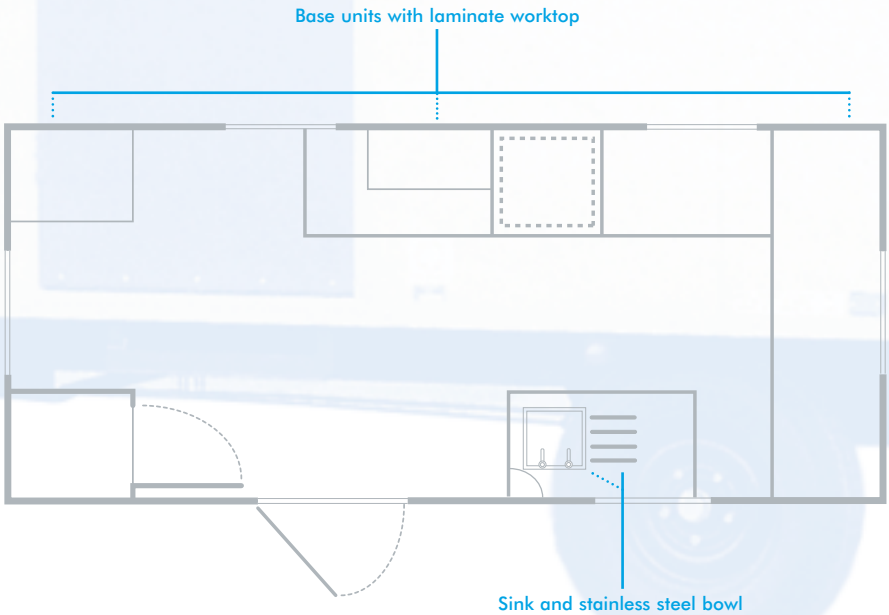
The Wagtech Mobile Trailer Laboratory is designed and constructed to be flexible, secure and robust, for use in a wide range of studies and environments.

Wagtech's team of engineers and scientists can recommend suitable instruments and internal layouts for many applications including:

Water Quality Testing,
General Environmental Monitoring
Contaminated Land Studies
Landfill Studies
Soil Classifications and Analysis

- Test results obtained quickly while on site.
- Analysis on site avoids sample deterioration and identifies potential health hazards rapidly.
- Design is flexible, modular and robust for use in a wide range of applications and conditions.
- Extensive range of the latest instruments available separately giving full laboratory grade accuracy.

Typical Plan



A big advantage of these mobile laboratories is that once the tests are completed at one site, the laboratory can easily be moved or shipped to another site without running the risk of damage to the instrumentation inside.

Specifications

Body	
External Dimensions	8.0m(L) X 2.2(W) X 3.0m(H)
Internal Dimensions	6.6m(L) X 2.1(W) X 2.1m(H)
Body Construction	Marine ply floor, GRP coated marine ply sides and roof
Chassis	
Construction	Close coupled twin axle chassis with towing hitch 3500kg GTW heavy duty all steel chassis frame
Towing Vehicle	Land Rover or other suitable 4 wheel drive vehicle
Weight	3500Kg

Purchase details

Wagtech Mobile Trailer Laboratory:
6.6m long trailer mounted on a close coupled twin axle chassis for towing by a 4 wheel drive vehicle, fully tropicalised, fitted complete with laboratory furniture, plumbing and electrical installation, water storage tank, electric water heater, tropical roof, spare wheel and air conditioning.

Wag-WE40200

Accessories:
Canvas side tent, fume cupboards, chemical toilet, butane gas installation, gas water heater, mobile generator. Please contact our technical department for details of these and other specialised mobile laboratories we have supplied in the past.

WAGTECH MOBILE LABORATORY

The Wagtech Mobile Testing Laboratory is based upon a standard 4 wheel drive, long base vehicle which is skillfully adapted to a high standard to accommodate fitted furniture and fittings required to carry out water testing in the field.

- Rapid response to monitoring requirements in remote areas.
- Compact and easy to maintain.
- Test results obtained quickly whilst on site.
- Analysis on site avoids sample deterioration and identifies potential health hazards rapidly.
- Extensive range of the latest portable instruments available separately giving full laboratory grade accuracy.

Applications

These mobile laboratories are ideal for use where extreme mobility and manoeuvrability are required.

In the past we have provided vehicles for the following applications:

Environmental management projects

Emergency rapid response situations

Scene of crime laboratories to police forces

Various health clinics for visits to rural areas

Purchase details

Wagtech Mobile Testing Laboratory:
Based upon a standard 4 wheel drive, long wheel base vehicle with hard top and side windows. The rear interior of the vehicle is modified to include laminate work tops, cupboards, sink unit plumbed-in foot or hand pump, refrigerator, rear overhead lighting and power sockets wired into vehicle 12v electrics.

Wag-WE40100

for the full range of Material Testing Equipment…

- Asphalt
- Bitumen
- Concrete
- Soils
- Aggregates

…consult the Wagtech Material Testing Catalogue.

hydrology & groundwater...

In any water resources assessment study, long term measurements of water quality, flow, level and depth are essential to produce accurate data for later processing and analysis.

The instruments in this section are widely used for measuring and recording this data.

MULTI-PARAMETER WATER QUALITY TESTER

Hand held instrument for the measurement of six different water quality parameters; pH, Conductivity, Salinity, Dissolved Oxygen, Temperature and Turbidity. All of the six sensors are enclosed inside one probe which can be directly submersed in a river well or, other water source with no sample collecting required.

- Simultaneously measures pH, Conductivity Salinity, Dissolved Oxygen, Temperature and Turbidity.
- Automatic temperature compensation for pH, conductivity and dissolved oxygen.
- Internal memory for storage of up to 20 samples with recall display and printout functions.
- Expanded display function allows an increase in resolution by one decimal place when more precise measurements are required.
- One touch, push button automatic calibration, alternatively, manual two point calibration can be carried out if required.
- Rugged construction with water resistant housing.
- Data back-up function.
- LCD display.
- Battery powered (1 X 9V), approximate battery life 750 hours.
- Automatic power off.

	Range	Accuracy	Resolution
pH	0 to 14pH	±0.05pH	0.1/0.01pH
Conductivity	0 to 1mS/cm 1 to 10mS/cm 10 to 100mS/cm	±1% full scale	0.01/0.001mS/cm 0.1/0.01mS/cm 1/0.1mS/cm
Salinity	0 to 4%	±0.1%	0.1/0.01%
DO (ppm)	0 to 19.9mg/L	±0.1mg/L	0.1/0.01mg/L
Temperature	0 to 50°C	±0.3°C	1/0.1°C
Turbidity	0 to 800 NTU	±3% full Scale	10/1 NTU

Purchase details

Multi-Parameter Water Quality Tester:
Complete with handheld display unit, 2m cable and probe with sensors for measuring pH, temperature, conductivity, DO, turbidity, and salinity. Supplied with calibration and reference solutions, 9V battery and carrying case.

Wag-WE50010

Multi-Parameter Water Quality Tester:
Fully complete and supplied as above specification, with a 10m cable.

Wag-WE50020

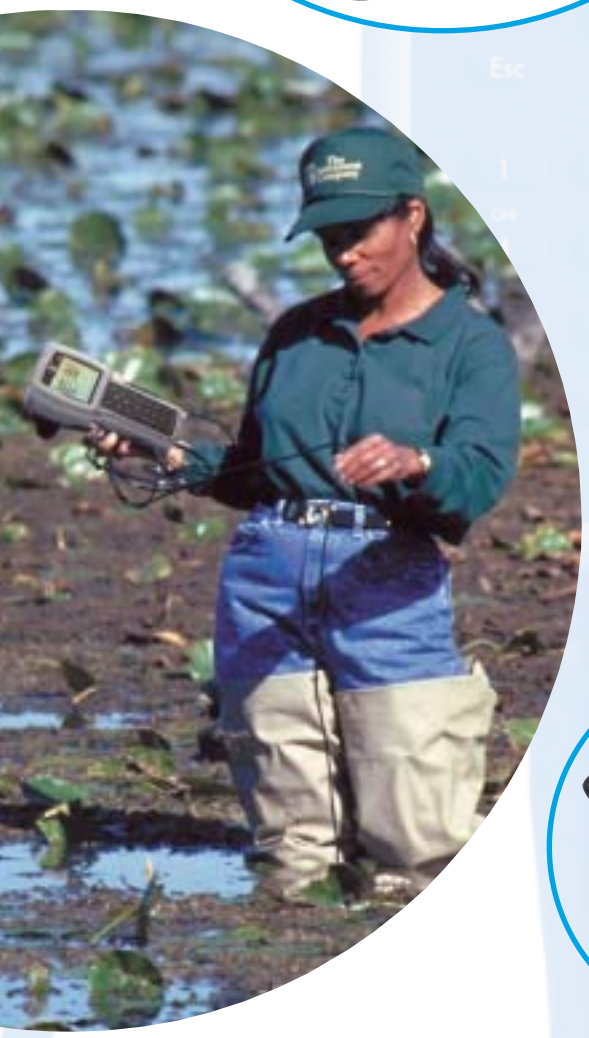
Printer Cable:
For connection to any standard printer.

Wag-WE50030

MULTI-PARAMETER WATER QUALITY MONITOR

Hand-held multi-probe system. Rugged and reliable, the instrument combines the versatility of an easy to use, easy to read hand-held unit with all the functionality of a multi-parameter system.

- Simultaneously measures Dissolved Oxygen, pH, conductivity, salinity, TDS, temperature and ORP.
- Memory for 49,000 data sets, time and date stamped, interval or manual logging.
- Field-replaceable electrodes.
- Compatible with Windows data analysis software.
- GLP assisting, records calibration data in memory.
- Available with 4 and 10m cable lengths.
- IP-67, impact resistant, waterproof case.
- Easy to use, screw on cap DO membranes.
- RS-232 Interface for PC connection.
- Battery powered by 4 'C' Alkaline batteries or optional rechargeable battery pack.
- Hand-strap which can be connected on either the right or left side of the instrument.



	Range	Accuracy	Resolution
Dissolved oxygen (% Air Saturation)	0-500%	0-200%, ±2% of reading or ±2% air saturation whichever is greater; 200-500%, ±6% of reading	0.1%
Dissolved Oxygen (mg/L)	0-50mg/L	0 to 20mg/L, ±2% of reading or ±0.2mg/L whichever is greater; 20 to 50mg/L, ±6% of reading	0.01mg/L
Temperature	-5 to 45°C	±0.15°C	0.1°C
Conductivity	0 to 200mS/cm	±0.5% of reading or ±0.001mS/cm; whichever is greater (4m cable)	0.001 - 0.1mS/cm (range dependent)
Salinity	0-70 ppt	±1.0% of reading or ±0.1 ppt whichever is greater	0.01 ppt
pH	0-14 pH units	±0.2 pH units	0.01 pH units
ORP	-999 to +999mV	±20mV	0.1mV
TDS	0-100g/L	N/A	4 digits

Purchase details

Multi-Parameter Water Quality Monitor:
Supplied with soft-sided carrying case and 4m cable for DO/Temp/Conductivity measurements & additional pH/ORP Probe.

Wag-WE50040

Multi-Parameter Water Quality Monitor:
Supplied with soft-sided carrying case and 10m cable for DO/Temp/Conductivity measurements & additional pH/ORP Probe.

Wag-WE50050

LONG TERM MULTI-PARAMETER WATER QUALITY & LEVEL MONITORS (LWQM)

A full range of multi-parameter instruments and accessories for most unattended monitoring, water quality sampling, profiling, and logging applications. These water quality instruments are designed to be used in fresh, salt or polluted water.

There are a wide range of sondes available to measure up to 17 parameters simultaneously including; temperature, pH, ORP, conductivity, specific conductance, salinity, DO (% and mg/L), depth or level, turbidity, Chlorophyll, TDS, ammonia, nitrate, and chloride.

All of the sondes work with the versatile, rugged Data Display Unit (DDU) which allows the user to easily log real time data, calibrate and set up sondes for deployment, and upload data to a PC. Designed for reliable field use the DDU features a waterproof IP-67, impact-resistant carry case.

- Used in 50mm or larger wells and boreholes.
- Simultaneous measurement of up to 17 water quality parameters.
- Field replaceable sensors.
- With Windows data analysis software.
- Internal memory stores up to 150,000 readings.
- Internal battery power and wiped sensor options offer long-term deployment.
- Integral cable available in a variety of lengths.
- Sonde communicates via RS-232 Interface to DDU and PC, and via SDI-12 to data collection platforms.

LONG TERM MULTI-PARAMETER WATER QUALITY & LEVEL MONITORS (LWQM)

Wag-WE50060

Wag-WE50070/50080

Wag-WE50090

Wag-WE50094

	Range	Accuracy	Resolution
Dissolved oxygen (% Air Saturation)	0-500%	0-200%, ±2% of reading or ±2% air saturation whichever is greater; 200-500%, ±6% of reading	0.1%
Dissolved Oxygen (mg/L)	0-50mg/L	0 to 20mg/L, ±2% of reading or ±0.2mg/L whichever is greater; 20 to 50mg/L, ±6% of reading	0.01mg/L
Temperature	-5 to 45°C	±0.15°C	0.1°C
Conductivity	0 to 100mS/cm	±0.5% + 0.001mS/cm	0.001 - 0.1mS/cm (range dependent)
Salinity	0-70 ppt	±1.0% of reading or ±0.1 ppt whichever is greater	0.01 ppt
pH	0-14 pH units	±0.2 pH units	0.01 pH units
ORP	-999 to +999mV	±20mV	0.1mV
Depth (Shallow)	9m	±0.02m	0.001m
Depth (Medium)	61m	±0.12m	0.001m
Depth (Deep)	200m	±0.3m	0.001m
Vented Level with Higher Accuracy	9m	±0.003m	0.0003m
Nitrate – Nitrogen Depth Limit 15m	0-200mg/L	±10% reading or 2mg/L, whichever is greater	0.001-1mg/L (range dependant)
Ammonium – Ammonia nitrogen Depth Limit 15m	0-200mg/L	±10% reading or 2mg/L, whichever is greater	0.001 - 1mg/L (range dependent)
Chloride Depth Limit 60m	0-1000mg/L	±15% reading or 5mg/L, whichever is greater	0.001 - 1mg/L (range dependent)
Turbidity Depth Limit 60m	0-1000NTU	±5% reading or 2NTU, whichever is greater	0.1NTU
Chlorophyll Depth Limit 60m	0-400µg/L Chl	n/a	0.1µg/L Chl

(NB: individual sonde specifications may vary slightly from the typical figures displayed above. For further information please contact our technical department).

The long term water quality and level monitors are available in different configurations specific to end user requirements.

Further probes/sensors can be added to increase the number of parameters measured. All are supplied with standard temperature sensor, internal memory to up to 15000 readings, RS232 and SD112 data interfaces for PC connection, sensor guard, calibration cup, maintenance kit, software, operation manual and standard 7.5m integral cable. Other lengths available up to 200m.

The DDU can be used if required with all LWQM sondes. It is supplied with a standard memory of 150 data sets (higher memory for up to 50,000 data sets available), downloadable to PC via RS232, and Windows based software.

Purchase details

Long Term Water Quality & Level Monitor (LWQM) with sensors for measuring temperature, conductivity and vented Level. With 7.5m integral cable.

Wag-WE50060

Long Term Water Quality & Level Monitor (LWQM) with sensors for measuring temperature, conductivity, pH and Vented Level. With 7.5m integral cable.

Wag-WE50070

Long Term Water Quality & Level Monitor (LWQM) with sensors for measuring temperature, conductivity, pH, DO and Vented Level. With 7.5m integral cable.

Wag-WE50080

Long Term Water Quality & Level Monitor (LWQM) with sensors for measuring temperature, conductivity, pH, DO Turbidity and Vented Level. With 7.5m integral cable.

Wag-WE50090

Data Display Unit with standard memory for 150 data sets, battery powered.

Wag-WE50094

WATER LEVEL MONITOR

combined pressure transducer and datalogger

hydrology and groundwater...

The Water Level Monitor provides a datalogger with a submersible pressure transducer for remote monitoring and recording of water level, flow and pressure data. This water testing instrument can be used in various applications, i.e Groundwater Monitoring, Irrigation Canals, Wetlands, infiltration/Inflow studies and much more.

Groundwater installation

Surface Water Installation

- Easy to use and install.
- Measures water depth down to 150m.
- Accurate water level measurements ranging from 1m to 76m.
- Unique 0-1m range for shallow water.
- Exports data directly to spreadsheets for analysis.
- Automatic barometric pressure and temperature compensation.
- Wet transducer eliminates vent tube concerns.
- Real-time readout of current data.
- Palm pilot software simplifies data collection.

Specifications

Data Logger

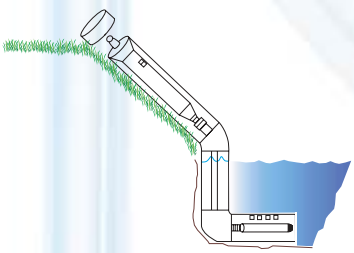
Memory	Non-volatile flash memory
Battery Life	Up to 3 years
Resolution	12bit
Moisture Protection	Acrylic coat
Storage Capacity	24,400 time & data stamped data points
Enclosure	Weather resistant cylindrical enclosure 48mm dia X 305mm length
Weight	0.7kg (inc battery & cable)
Communication	RS232 cable (connects loggers dataport to PC)

Pressure Transducer

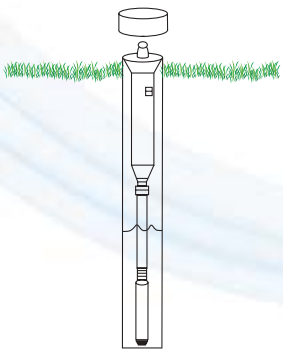
Accuracy	0.2% over 1°C to 21°C range
Materials	Stainless steel housing & microscreen

Cable

Length	Standard 7.5m (other lengths available up to 150m)



Surface Water Installation



Groundwater Installation

Purchase details

Water Level Monitor:
Supplied complete with Datalogger, housed in a weatherproof cylindrical enclosure, pressure sensor, PC software, 7.5m of cable & 9Vdc battery.
Wag-WE50120

Extra Cable Lengths: from 7.5m to 150m price per metre.
Wag-WE50130

Data Removal Pack:
Includes handheld computer, field cable, & robust carrying case.
Wag-WE50140

Tel: +44 (1635) 872929
Fax: +44 (1635) 862898/872808

wagtech INTERNATIONAL

email: export@wagtech.co.uk
Web: www.wagtech.co.uk

PORTABLE ECHO SOUNDER

The Portable Echo Sounder is a low cost single beam water depth instrument, which is used by surveyors engaged in river, lake and inshore hydrographic surveying. The instrument can be used as a conventional echo sounder with depth data output via a RS232 serial port. The unit is sold as a complete package and includes transducer, leads, internal battery charger and a heavy duty carrying case.

- Measures water depths down to 90m.
- Light weight and easy to use in a small boat.
- Internal memory stores data for processing.
- Graphic LCD display shows depth data continuously.
- Can be connected to separate GPS equipment if required.

Specifications

Transducer Frequency	200 KHz
Beam Spread	8-10 degrees
Depth Range	0.30m to 90.0m
Accuracy	±0.025m (RMS)
LCD	240 X 128 pixels
Power	12.0v sealed lead acid battery
Battery Life	4-8 hrs between charges
Standard Memory	512Kb CMOS (30000 pnts)
Standby battery life	5000 hrs
Temperature range	0-45°C
Overall Dimensions	140h X 220w X 100d (mm)
Unit Box Weight	2.5Kg

Purchase details

Portable Echo sounder:
Supplied complete with boat transom mount active transducer, software package, serial data lead battery charger and a rugged carrying case.

Wag-WE50150

DIPMETER

Wagtech dipmeters are robust, light and convenient in use, and are all fitted with an extremely strong tape marked in meters and centimetres. Powered by a 9V PP3 battery the, dipmeters produce an amplified audio signal (buzzer) when the probe contacts a water surface.

- Lightweight & Durable.
- Reinforced tape with close interval markings.
- Variable sensitivity control.

Purchase details

Dipmeter:
Standard Dipmeter - The graduated tape is wound on a robust open PVC reel which is mounted on a small steel carrying frame.

Length of tape: 50m	Wag-WE50160
Length of tape: 100m	Wag-WE50170
Length of tape: 200m	Wag-WE50180

Dipmeters with any length of tape up to 500m maximum can be supplied on request.

AUTOMATIC WATER SAMPLER

The Automatic Water Sampler is designed specifically to meet the sampling requirements for industrial discharges sewers, rivers and streams. The sampler takes a 'time weighted composite sample in a 10 litre bottle, to meet wastewater sampling guidelines.
The instrument can be easily set up near industrial discharges streams and also be suspended in a manhole for sewer sampling.

- Simple to operate no programming required.
- Timed and external flow pulsed composite samples.
- Adjustable and repeatable sample volume.
- Re-chargeable battery or AC powered.
- lightweight and easy to carry.
- Peristaltic pump prevents sample contamination.

Specifications

Automatic water sampler

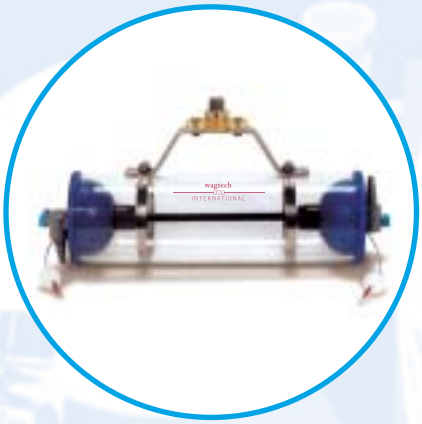
Sample Size Composite	25ml to 600ml as set by user (10 litre composite sample maximum)
Operating Temperature	0-70°C
Materials	
Enclosure:	Expanded UV protected by PVC
Bottle:	Ten litres polyethylene
Sample Tubing:	Polyethylene
Flow Rate	1000ml per minute at 1.2m head
Type	Peristaltic
Maximum Lift	6.7m
Logic Timer/Controller	CMOS solid state
Sample Hose	One 4.5m nylon reinforced 6mm ID polyethylene flexible tubing sections with intake strainer. Hose may be extended as required, using standard 6mm tubing and fittings
Battery	Re-chargeable 5 AH gel Cell
Battery Life	Battery will power sampler for a minimum of four months inc: five 24hr storm events before recharge required
Dimensions	L: 230 X W: 430 X H: 560mm
Weight	10Kg

Purchase Details

Automatic Water Sampler:
Supplied complete with a rugged rainproof lockable carrying case, 10 litre polyethylene sample bottle for composite sample,one peristaltic sampling pump, a control panel enclosed logic timer/controller, one 4.5m sample pickup hose with removable debris strainer, a 5AH re-chargeable gel cell battery and a battery charger.

Wag-WE50190

WATER SAMPLING



Van Dorn Water Sampler

The Van Dorn Water Sampler is designed for vertical and horizontal deployment, and is ideally suited for use in marine or fresh water environments. The device has no, internal metal parts, making it suitable for obtaining samples for heavy metal analysis and a clear acrylic body enabling a clear visual inspection of the sample.

Specifications & Purchase Details

Van Dorn Water Sampler

Capacity	1 or 2 litres available
Weight	5Kg

Van Dorn Water Sampler:

Vertical Style, Capacity 1000ml	Wag-WE50200
Vertical Style, Capacity 2000ml	Wag-WE50210
Horizontal Style, Capacity 1000ml	Wag-WE50220
Horizontal Style, Capacity 2000ml	Wag-WE50230

Water Sampler Field Kit

This water sampler field kit is ideal for water sampling at any depth zooplankton, collection, and secchi disc transparency measurements.

Specifications & Purchase Details

Water Sampler field Kit:

The kit is supplied complete with, clear polycarbonate 1.0 litre water sampler, 200g messenger, 20cm limnological secchi discs; armoured thermometer (liquid spirit filled,-5°C to 40°C in 0.5° increments); student plankton net (20cm diameter x 60cm length x 153μm); three calibrated lines with 0.5m graduations, line reels, plastic carrying case, and instructions.

Vertical Water Bottle	Wag-WE50240
Horizontal Water Bottle	Wag-WE50250

Combined Water Sampling & Measurement Kit

The Wagtech Combined Water Sampling and Measurement Kit is ideal for collecting water samples bottom samples, plankton, samples measuring turbidity, temperature, and colour. Lightweight and compact for easy transport and simple to operate without extensive training.

Specifications & Purchase Details

Wagtech Combined Water Sampling and Measurement Kit:

The kit is supplied complete with a D.O water sample bottle, a bottom sampling dredge, a secchi disc, a sounding lead and calibrated line, a plankton net, a colour scale, and armoured thermometer (-5°C to 50°C in 0.5° graduations). All packed in a 350mm x 180mm foam-lined carrying case.

Wag-WE50260

Water Samplers

Polypropylene, with a nylon coated handle, also will accept a BOD bottle.

Specifications & Purchase Details

Water Samplers:
Sizes available as below:

60ml	Wag-WE50270
1000ml	Wag-WE50280
1400ml	Wag-WE50290

SURBER SAMPLER/NETS

Surber Sampler

The Surber Sampler is used for sampling organisms in streams and shallow rivers. Positioned with the 1000μm net down stream, the natural flow of water causes the bag to remain open.

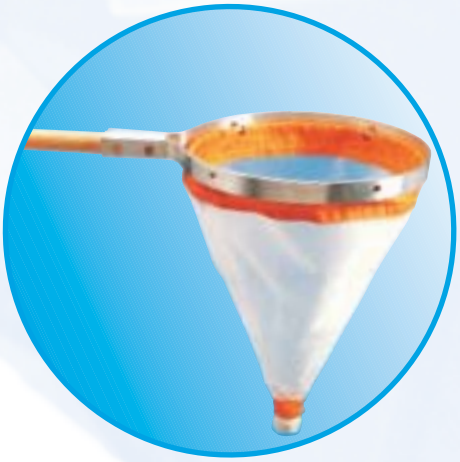
Invertebrates are then collected into the fine mesh net. When the open bottom frame is seated in pebbles on the stream bed and detritus within the stream bed is disturbed, then concealed organisms are swept into the net by the current of the water.

Specifications & Purchase Details

Surber Sampler

Sampling area	305mm x 305mm
Weight	3.2Kg

Surber Sampler: Wag-WE50330



Hand Nets

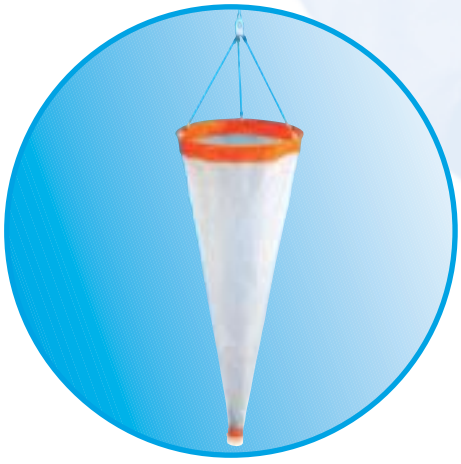
The Hand net is light and easy to use, and has been designed to overcome problems such as warping and breaking. The frame is attached to a wooden handle.

Specifications & Purchase Details

Hand Net

Material	Wooden handle aluminum frame Polyester netting
Width of Frame	250mm
Weight	1.1Kg

Hand Net: Wag-WE50340



Plankton Nets

The Plankton Net is made from a strong nylon netting for durability and accuracy, with a tough nylon collar. The net is supplied complete with a brass frame and a 0.3mm PVC filter.

Specifications & Purchase Details

Plankton Net

Material	Nylon
Aperture size	0.1mm
Net Diameter	300mm
Overall Length	900mm

Plankton Net:

Includes a mini dolphin net /bottle adaptor with 125ml sample bottle. Available in 3 sizes.

Plankton Net 80 microns Wag-WE50350

Plankton Net 156 microns Wag-WE50360

Plankton Net 363 microns Wag-WE50370

SEDIMENT SAMPLING

Van Veen Bottom Sampler

This instrument is used for obtaining samples of sand or silt from river beds and lakes. The sampler is lowered with the bucket jaws open, it is then retrieved and raised to the surface by applying tension to the line which closes the two buckets.

Specifications & Purchase Details

Van Veen Bottom Sampler

Material	Stainless steel
Sampling area	250 sq cm
Weight	5Kg

Van Veen Bottom Sampler:
Supplied complete with bridles — Wag-WE50300

Ekman Bottom Sampler

This device is used for obtaining samples of sediments from river beds, lakes and estuaries. The sampler is designed with hinged upper doors which swing open when being lowered through the water.

A stainless steel messenger is dropped down the line to close the dredge, preventing washout of the sample.

Specifications & Purchase Details

Ekman Bottom Sampler

Material	Stainless steel
Sampling area	20 X 20cm
Weight	10Kg

Ekman Bottom Sampler: Wag-WE50310

Sediment Core Sampler

This is used for obtaining core samples from the bottom of rivers and lakes Core samples of 50mm diameter can be obtained from depths of up to 125m using an extension tube for retrieving samples in shallow water and a rope in deep water.

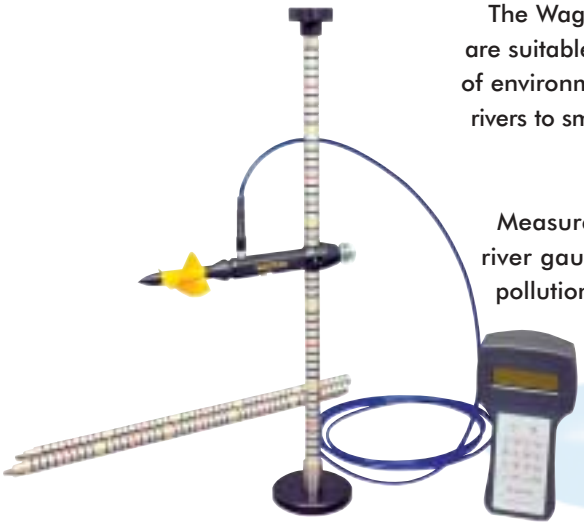
Specifications & Purchase Details

Sediment Core Sampler

Material	Stainless steel & brass
Sampling Size	50mm (dia) x 300mm (L)
Max Depth	Up to 125m
Weight	12Kg

Sediment Core Sampler: Wag-WE50320

WATER VELOCITY METERS



The Wagtech Current Flow Meters are suitable for use in a wide variety of environments ranging from major rivers to small streams, fresh and salt water or effluent.

Measurements can be made for river gauging, open channel flow, pollution and hydrometric studies.

The Wagtech Digital Display Unit (DDU) offers real time and averaged display of velocity with data logging. It is capable of storing calibration coefficients for up to 4 different meters. The DDU comes with an LCD display with optional backlight sealed to IP65 and weighing less than 1Kg.

- Easy to use, robust, low maintenance design.
- Reliable & accurate velocity readings.
- Wide measuring range.
- Calibrated in accordance with BS3680.

Specifications

WFM001	
Velocity Range	0.03 to 10m/s
Accuracy	± 1.5% reading above 0.15m/s ± 0.004m/s below 0.15m/s
Impeller	125mm dia. by 0.27m pitch
WFM002	
Velocity Range	0.04 to 5m/s
Accuracy	± 2.5% reading above 0.5m/s ± 0.001m/s below 0.5m/s
Impeller	50mm dia. by 0.10m pitch
Materials (WFM001 & WFM002)	
Motor Body	Black Acetal
Impeller	High Impact Styrene
Impeller Shaft	Stainless Steel on Jewelled Bearing

Purchase details

Wagtech Large Current Flow Meter
Wading set, comprising model WFM001 Flow Meter with 125mm diameter impeller, Digital Display Unit, 3 X 0.5m stainless steel wading rods, complete with base plate, direction knob, 2m cable, carrying case and operation manual.

WagWE50380

Suspension set: comprising model WFM001 flow meter with 125mm diameter impeller, tail fin, suspension bar digital display unit, 35m suspension cable, carrying case and operation manual.

Wag-WE50400

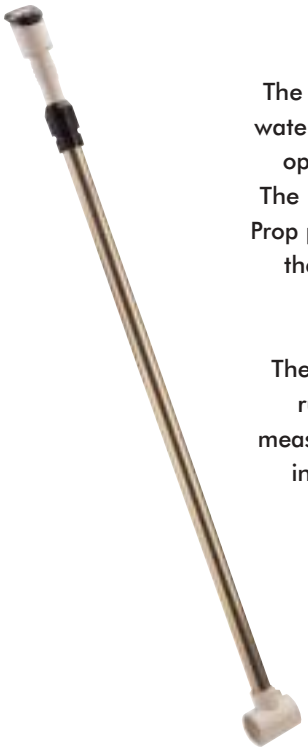
Wagtech Small Current Flow Meter
Wading set, comprising model WFM002 Flow Meter with 50mm diameter impeller, Digital Display Unit, 3 X 0.5m stainless steel wading rods, complete with base plate,direction knob, 2m cable, carrying case and operation manual.

Wag-WE50390

Suspension set: comprising model WFM002 flow meter with 50mm diameter impeller, tail fin, suspension bar digital display unit, 35m suspension cable, carrying case and operation manual.

Wag-WE50410

WAGTECH FLOW MASTER



The Wagtech Flow Master is a highly accurate water velocity instrument for measuring flows in open flow channels and partially filled pipes. The Flow Master consists of the protected Turbo Prop positive displacement sensor coupled with the expandable probe handle to the digital readout display.

The water instrument is ideal for storm water run-off studies, sewer flow measurements, measuring flows in rivers and streams, and also in monitoring velocity in ditches and canals.

- Highly accurate & Low cost.
- Utilised by water professionals worldwide for over 12 years.
- Lightweight, rugged, and reliable.
- Easy flow monitoring.
- Debris shedding turbo-prop.
- Rain-proof digital read-out.
- Padded carrying case for easy storage.
- Telescoping handle with staff gauge.
- Displays instantaneous and true average velocity.
- Digital display in ft/sec or m/sec.

Specifications

Range	0.1-8m/sec
Accuracy	0.03m/sec
Display	LCD
Sensor type	Turbo-Prop propeller (electro magnetic sensor)
Weight	4Kg
Size Length	WagFP101 1-2m WagFP102 1.5m-4.5m
Sensor housing	50mm diameter X 75mm long
Materials	PVC, anodised aluminium, stainless steel bearing
Power	Internal batteries-1yr life
Operating Temperature	0° to 50°C

Purchase details

WagFM101:
Water Flow Master, 1m-2m
Wag-WE50430

WagFM102:
Water Flow Master, 1.5-4.5m
Wag-WE50440

CURRENT MASTER

dye-dilution open channel flow meter

The Wagtech Current Master uses the well known tracer dilution technique to determine the water flow rate in litres/second, quickly and easily, in any size and shape of open channel or pipeline. Just one operator is required firstly to place, the probe into the water, then to pour a measured quantity of common salt into the water course approximately 100 to 500 metres upstream. The Current Master then monitors the salt plume created, calculates the flow, displays this in litres/second and stores the reading for later retrieval. The software supplied with the unit can be used if required to monitor the whole process.

- Quick and easy to use.
- Accurate results in all water conditions.
- Displays reading in litres/second.
- Use on any open water course or pipeline.
- Flow range from 10 to 5000 litres/second.
- Built-in Data Logger to store readings from up to 15 sites.
- Ideal for use in all water resources and pollution studies.

Specifications

Range	10 to 5000 litres/second
Resolution	1litre/second
Repeatability	better than 5%
Time for Test	Approx 10 to15 mins
Power	4 x AA type batteries lasting about 40 hours
Sizes	Meter: 275 x 120 x 50mm Carrying Case: 550 x 300 x 75mm Weight of kit: 2.5Kg

Purchase details

Wagtech Current Master:
Supplied complete with meter, sensor, 10m long sensor cable, 5 calibration doses, software, battery and carrying case.

Wag-WE50420

meteorology &

ENVIRONMENTAL MONITORING...

A range of conventional and high technology instruments for measuring and recording weather data.

THERMOMETERS
temperature and humidity

The Rosted Thermometer displays both indoor and outdoor temperatures simultaneously in increments of 0.1°C or 0.1°F and also stores maximum and minimum temperatures in its memory.

- Ambient, maximum and minimum temperatures.
- Selectable °C or °F.
- Indoor range: -50°C to +50°C (-22°F to +122°F).
- Outdoor range: -20°C to +70°C (-4°F to +158°F).
- The outdoor data on the model is transmitted to the indoor receiver via the 433 MHz radio frequency from a distance of up to 30m.
- Low battery warning display.
- Suitable wall mounting or free standing.

Specifications

Rosted Thermometer

Indoor Receiver	123 X 54 X 23mm
Remote Sensor	104 X 65 X 20mm

Purchase details

Rosted Thermometer:

Wag-WE60102

Day and night thermometer, housed in a fully enclosed plastic case. The twin scales record the maximum and minimum temperatures since the last reset. Normally used to check variations in day and night time temperatures.

- Weather resistant, suitable for both indoors and outdoors.
- Reset by turning knob no magnet required.
- Range: -36 to +50°C X 1°C.
- Weight: 180g.

Maximum/Minimum Thermometer, a thermometer suitable for wall mounting with an anti-theft fitting.

- Housed in a small plastic case 513 X 110mm.
- Reset by slider, no magnet required.
- Range: -30 to +50°C.
- Weight: 0.75g.

Purchase details

Day & Night Thermometer:

Wag-WE60104

Maximum/Minimum Slimline Thermometer:

Wag-WE60106

THERMOMETERS
temperature and humidity

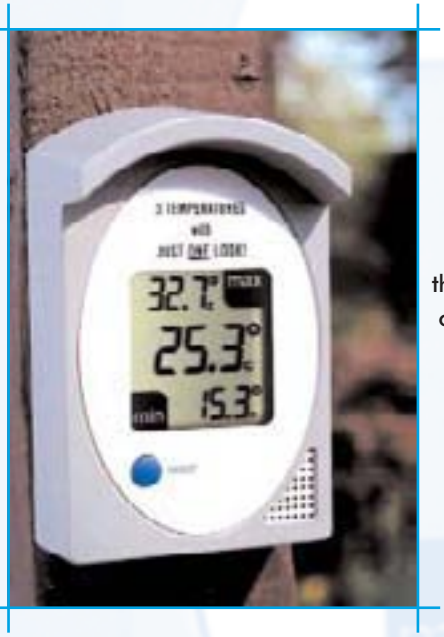
Electronic thermometer for simultaneous indoor and outdoor temperatures. With a button recall memory of maximum and minimum temperatures.

Specifications

Measuring Range	-10°C to +60°C (14°F to 140°C) for inside
	-50°C to +70°C (-58°F to 158°F) for outside
Accuracy	±1°C (±1.8°F) within 0°C to +50°C (32°F to 122°F)
	±2°C within -50°C to 0°C and +50°C to +70°C
	(±36°F within -58°F to 32°F and 122°F to 158°F)
Resolution	0.1°C (0.1°F)
Cable Length	3m (10ft)
Battery	1.5 Volt AAA included
Size	85 X 60mm
Weight	90g

Purchase details

Electronic Maximum/Minimum Thermometer: Wag-WTE60112



Maximum and Minimum electronic thermometer, suitable for wall mounting or free standing. The wide temperature range and solid construction make it particularly suitable for outdoors.

Specifications

Measuring Range	-50°C to +70°C (-58°F to 158°F)
Operating Range	-20°C to +50°C (-4°F to 122°F)
Accuracy	± 1°C (± 1.8°F) over operating range
Resolution	0.1°C (0.1°F)
Battery	One 1.5 v AA Alkaline included
Size	115 X 71 X 44mm
Weight	133g

Purchase details

Electronic Maximum/Minimum Thermometer: Wag-WE60114

Wet and Dry Bulb Hygrometer consists of 2 sheathed pattern ordinary thermometers manufactured to BS692 meeting BMO requirements, 4 thermometer brackets for mounting them in screen, water reservoir with bracket, pack of 50 wicks and 10 round headed brass woodscrews.

Specifications

Range	-20°C to +55°C (-58°F to 158°F)
Graduations	0.5°C
Accuracy	±0.1°C
Medium	Mercury

Purchase details

Wet & Dry Bulb Hygrometer Type 1C: Wag-WE60116

THERMOMETERS
temperature and humidity

Electronic Maximum/Minimum thermometer and Maximum/Minimum Hygrometer-simple 2 button operation. The six functions show:

- Temperature of the moment, from memory
- Maximum daytime temperature
- Minimum night time temperature reached
- Rel.% Humidity of the moment
- From memory: daytime rel.% Humidity
- Night time rel.% Humidity reached

The model is fully portable, suitable for wall mounting or free standing, battery operated complete with a low battery warning signal feature.

Specifications

Temperature Range	-10°C to +50°C (14°F to 140°C) for inside
Humidity Range	10% to 99% r.h.
Max error	±1°C within -10°C to +50°C (operating range) ± 5% r.h. within 25% to 75% r.h. at 0°C to 50°C (operating range)
Size	110 X 70mm
Weight	87g

Purchase details

Electronic Maximum/Minimum Thermometer & Hygrometer:
Fully complete and supplied with instructions.

Wag-WE60118

The Rosted Hygrometer, displays both indoor and outdoor rel.% humidity simultaneously. Stores maximum and minimum values in its memory.

- Ambient, maximum and minimum rel.% humidity.
- Range: 5% to 99%.
- Shows average rel.% humidity of both indoor and outdoor readings over the last 7 days.
- The outdoor data on the model is transmitted to the indoor receiver via the 433 MHz radio frequency from a distance of up to 30m (approx 100ft).
- Low battery warning display.
- Suitable wall mounting or free standing.

Specifications

Rosted Hygrometer

Indoor Receiver	123 X 54 X 23mm
Remote Sensor	104 X 65 X 20mm

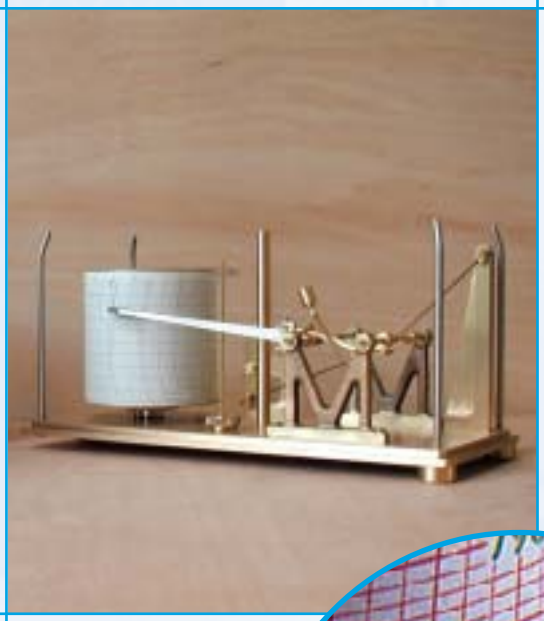
Purchase details

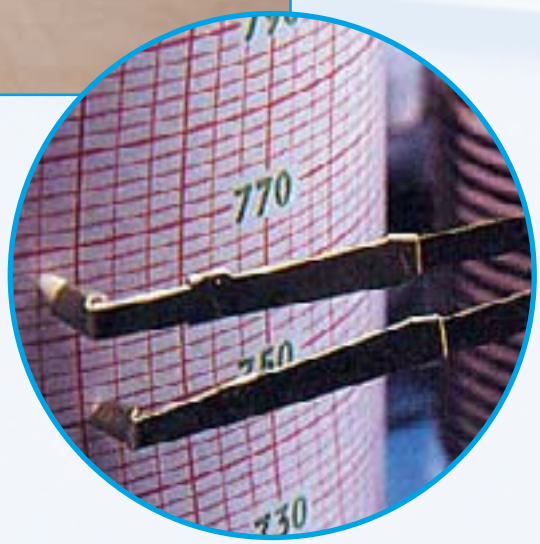
The Rosted Hygrometer :

Wag-WE60124

THERMOHYGROGRAPH

temperature and humidity





Thermohygrograph

The Thermohygrograph has cast brass side frames and base, mechanism machined and fabricated from high quality brass, polished and lacquered.

Recording Section

- Battery operated quartz clock with simple mechanism for changing rotation from daily to weekly or monthly.
- Daily or weekly rotation selected by change gear provided.
- Recording is effected by easily changed fibre tipped pen.

Specifications

Humidity Section

Range	0 to 100%
Accuracy	±3% between 20 & 80%
Sensing Element	Specially treated human hair

Temperature Section

Range	-5 to +55°C or 0 to 50°C
Accuracy	±1% of range
Sensing Element	Bi-metalic coil (corrosion protected)

Purchase details

Thermohygrograph:
Fully complete and supplied with fabricated, vented sheet steel cover finished in blue hammer finish stove enamel with convenient carrying handle.

	Wag-WE60140
Pack of 100 daily charts	Wag-WE60150
Pack of 100 weekly charts	Wag-WE60152
Pack of 100 monthly charts	Wag-WE60154
Fibre Tipped Pen (Humidity-Red)	Wag-WE60156
Fibre Tipped Pen (Temp-Black)	Wag-WE60158

PICHE EVAPORIMETER

evaporation

Purchase details

Piche Evaporimeter:
Complete with 400 filter paper discs. Water reservoir graduated every 0.1ml. Weight 60g.

Wag-WE60210

Accessories

Filter paper discs: packet of 400	Wag-WE60214
Clips: for attaching filter paper discs	Wag-WE60216
Stand:	Wag-WE60217

HOOK GAUGE EVAPORIMETER

evaporation

Specifications

Floating Thermometer	
Range	-30 to +70°C X 5°C
Accuracy	±1°C
Size	340 X 140 X 60mm
Weight	310g
Hook Gauge Adjustment Range	100mm
Micrometer	Reads to 0.02mm
Weights	
Tank	64Kg
Still-Well	1.8Kg
Hook Gauge	340g
Dimensions	
Tank	254 X 1220mm (H X D)
Still-Well	1.8Kg
Hook Gauge	340g

Purchase details

Hook Gauge Evaporimeter:
Fully supplied and complete with, hook gauge, still-well and galvanised iron tank.
(supplied without floating thermometer)
Weight 67Kg.

Wag-WE60220

Accessories

Galvanised iron tank:	Wag-WE60222
Still-Well:	Wag-WE60224
Hook Gauge:	Wag-WE60226
Floating Thermometer:	Wag-WE60228

PLASTIC RAIN GAUGE

rainfall

Plastic Rain Gauge

- Moulded from clear high quality SAN (Styrene Acrylonitrile).
- Permanently embossed and accurate scale clearly calibrated in single millimetres from 1mm to 40mm. Each mm calibration equals approx. 1 litre of water per sq. meter. can also be supplied marked with additional scale in inches.
- The 75mm diameter opening allows for direct rainfall (or sprinkler output) to enter the funnel from all directions.
- Approx size: 200 X 125mm.

Purchase details

Plastic Rain Gauge:	Wag-WE60310

DAILY RAIN GAUGES

rainfall

Copper Rain Gauge

Splayed-Base Rain Gauge

Dines Tilting Siphon Rain Gauge

Purchase details

Copper Rain Gauge:
With 127mm diameter rim with inner can and measuring cylinder calibrated in mm.
Weight 1.1Kg.

	Wag-WE60320
Accessories	
Measuring cylinder:	Wag-WE60324

Purchase details

Splayed-base Rain Gauge:
Mk 2 model constructed from copper with splayed base to provide extra stability, and a brass septum ring with a 127mm diameter. Supplied with inner can taper-base glass measure.

	Wag-WE60330
Accessories	
Taper-base glass measure:	Wag-WE60334

Purchase details

Dines Tilting Siphon Rain Gauge:
A daily recording rain gauge, fitted with a radiation shield to reduce evaporation from the cone, and 8 day clock revolving once in 24 hours.
Weight 37Kg.

	Wag-WE60340
Accessories	
Daily charts: 1 year supply	Wag-WE60342
Fibre Tip pens:	Wag-WE60344
Pen Arm:	Wag-WE60346
Float with pen rod and guide:	Wag-WE60348

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ELECTRONIC RAIN GAUGE

rainfall

- Measuring range: from 0.01mm up to 9999.99mm.
- Rain collector and 9.90m cable are made of weather and frost resistant materials.
- Rain collector is self-emptying.
- Battery operated.
- Low battery warning indicator.
- Suitable wall mounting or free standing.

Specifications & Purchase details

Dimensions: Control Unit	104 X 65 X 20mm
Collector	110mm diameter
Weight	377g

Electronic Rain gauge: Wag-WE60360

WEATHER MONITORS

The Wagtech Weather Monitor gives continuous and accurate weather readings at a glance. Wind Speed and barometric pressure are both displayed by means of pointers, wind direction displayed by attractive LED lights positioned around the wind speed dial. External temperature (min/max) is shown by clear LCD display All sensors are extremely robust with a high degree of accuracy and each is supplied pre-wired with 25 meters of cable. Installation is very simple as clear instructions are provided.

Specifications

Wind Directions	
Resolution	16 points i.e. 22.5°C
Threshold	1.5m/s, 3Knots, 3.5 mph or 5km/h
Damping Delay	1 second
Wind Speed	
Max Speed Indicated	80Kts, 90 mph, 145km/h
Accuracy	±5% or 3kts
Resolution	Better than 1knot
Response time	< 300mS (60% of final reading)
Barometer	
Range	950 - 1050 mB
Accuracy	±5mB
Temperature	
Range	-40°C to +50°C
Accuracy	±0.5°C @20°C
Resolution	0.1°C or F
Size	255mm (L) X 130mm (H) X 55mm (D)
Power	220-240V 50/60 Hz and 12-24V d.c.

Purchase details

Wagtech Weather Monitor (WWM): Wag-WE60380

CAMPBELL STOKES SUNSHINE RECORDER

light measurement

The Campbell Stokes Sunshine Recorder is manufactured to the specifications of the British Meteorological Office. The instrument is used to measure the duration of sunshine each day.

There are three types of measuring cards to correspond to the behaviour of the sun at different seasons: long curved for use in summer, straight for use near the equinoxes and short curved for use in winter.

Specifications

Latitude Adjustment	0° to 40° N or S
Sphere	102mm ±1.3mm diameter Focal length for sodium D light, 74.9mm ±0.25
Size	240 X 187 X 165mm
Weight	4.3Kg

Purchase details

Campbell Stokes Sunshine Recorder: Universal	Wag-WE60420
Accessories	
Sunshine Cards: 1 year supply	Wag-WE60432
Summer Cards: 100 cards	Wag-WE60434
Winter Cards: 100 cards	Wag-WE60436
Equinoctial Cards: 100 cards	Wag-WE60438

BAROMETER

barometric pressure

The aneroid Barometer, calibrated and tested to a linear accuracy of ±1 hPa (millibars) of mercury over the normal operating range of 980 - 1030hPa.

Aneroid Barometer

- Suitable for wall mounting.
- Housed in a chrome case.
- Temperature compensated movement.

Specifications

Dimensions	130mm Ø X 35mm
Weight	550g

Purchase details

Barometer:	Wag-WE60460

MICRO BAROGRAPH

barometric pressure

Micro Barograph

- Cast gun metal base.
- Mechanism machined and fabricated from high quality brass, polished and lacquered.

Specifications

Range	800 to 1050 hPA
Accuracy	± 0.2 hPA
Sensing Element	Double stack aneroid capsule

Purchase details

Micro Barograph:	Wag-WE60480
Pack of 100 daily charts:	Wag-WE60482
10 pack of 100 weekly charts:	Wag-WE60484
Fibre tipped pen:	Wag-WE60486

DIGITAL ANEMOMETER

wind speed and direction

Digital Anemometer with Thermometer

- Windspeed measurements in mph, m/s, knots or km/h – includes Beaufort scale.
- Shows maximum and average wind speed.
- Temperature indications in °C or °F.
- Calculates wind chill.
- LCD Backlit.
- Water resistant.
- Battery operated.

Specifications

Digital Anemometer

Measuring ranges	Wind Speed minimum 0.2m/s maximum 30m/s
Temperature	-30 to +60°C equivalent in °F
Size	137mm X 18mm X 50mm
Weight	54g

Purchase details

Digital Anemometer:

Wag-WE60492

HAND HELD ANEMOMETER

wind speed and direction

Specifications

Hand held Anemometer

Scales	0 to 120 kph, 0 to 12 Beaufort, 0 to 35 m/s, 0 to 70 knots
Accuracy	±3%
Threshold	Approximately 2m/s
Operating Temperature Ranges	-35 to 45 °C
Wind Strength/Speed	Based on 4 scales: m/s, beaufort, kph and knots

Purchase details

Hand Held Anemometer :

Wag-WE60496

STEVENSON SCREEN

Designed to hold a range of basic weather instruments. Made from good quality wood with double louvred sides and painted white.
Size: 48cm(L) x 54cm(W) x 58cm(H).

Purchase details

Stevenson Screen:
Supplied without instruments Wag-WE60498

WAGTECH MANUAL WEATHER STATION

A simple weather station comprising a range of conventional instruments housed in a Stevenson Screen to enable basic weather data to be collected daily.

The complete station comprises the following instruments: (details of these are shown on previous pages).

Copper Rain Gauge	see page 71
Max/Min Thermometer	see page 66
Wet and Dry Bulb Hygrometer	see page 67
Hand Held Anemometer	see page 74
Stevenson Screen	

Purchase details

Wagtech Manual Weather Station (MWS): Wag-WE60500

DATA LOGGING SYSTEMS

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Dedicated, accurate and reliable data logging systems, which are easy to use, completely weather proof, robust, durable and low cost.

The Wagtech Dataloggers have a large storage memory and extended battery life to allow long term projects to be monitored at remote sites, or short term logging at frequent intervals. Varied range of input types. Channels can be individually programmed with logging interval and gain to suit each sensor type.

All systems supplied with ready-to-go package of batteries, data lead and Windows communication software.

- Multi-channel with a choice of voltage, current, thermistor or digital count inputs.
- User selectable logging and integration intervals, plus a 24 hour summary.
- Optional electrical relay outputs for switching or alarm facilities.
- Weatherproof housing and connectors as standard.
- Complete independent units. Battery operated, self-contained batteries last up to 4 months. Option of additional power supplies – solar and mains.
- Available with RH and/or Air temperature sensors.
- Data off load & logger setup via RS232 port (cable and software supplied as standard for PC).
- Optional fast off load and data graphing available.
- Access via a portable PC, permanent cable link or GSM mobile phone remote data link.
- Real-time clock synchronization with other installations.
- Can be used with all Wagtech's range of sensors, plus those from most other manufacturers.

DATA LOGGING SYSTEMS

Purchase details

Dedicated 'packages' available with all sensors and cables, eg. for measuring relative humidity/temperature, rainfall, water depth logging, wind speed and direction records.

Relative Humidity & Temperature System:
Comprises Datalogger with integral RH/temperature sensors. Includes batteries, standard software and RS-232 data lead.
Wag-WE60502

Radiation screen with mounting bracket (please specify at time of ordering whether the system is to be pole or table mounted).
Wag-WE60504

Rain Monitoring System:
Comprises Datalogger, batteries, standard software, RS-232 data lead, rain gauge and base levelling plate.
Wag-WE60510

Wind Speed & Direction System:
Comprises 2-channel Datalogger, batteries, standard software, RS-232 data lead.
Wag-WE60525

Anemometer with 3m cable and data-logger connector.
Wag-WE60530

Windvane with 3m cable and data-logger connector.
Wag-WE60532

Portable 2m mast – mast mounted on metal plate with guylines and pegs.
Wag-WE60534

Dual arm pole top mount for 2wind sensors.
Wag-WE60536

Pole mount and fixings for data-logger.
Wag-WE60538

Pyranometer System:
Comprises Datalogger with pyranometer sensor. Includes batteries, standard software and RS-232 data lead.
Wag-WE60545

Air Pressure System:
Comprises 1-channel Datalogger, batteries, standard software, RS-232 data lead.
Wag-WE60550

Barometer, temperature compensated with 3m cable and data-logger connector.
Wag-WE60552

Pole/wall mount and fixings for air pressure sensor and data-logger (NB: A pole or similar will be required for mounting the air pressure sensor and possibly the data-logger).
Wag-WE60554

Optional Accessories
Datalogger deluxe graphical and communications software.
Wag-WE60558

AUTOMATIC WEATHER STATIONS

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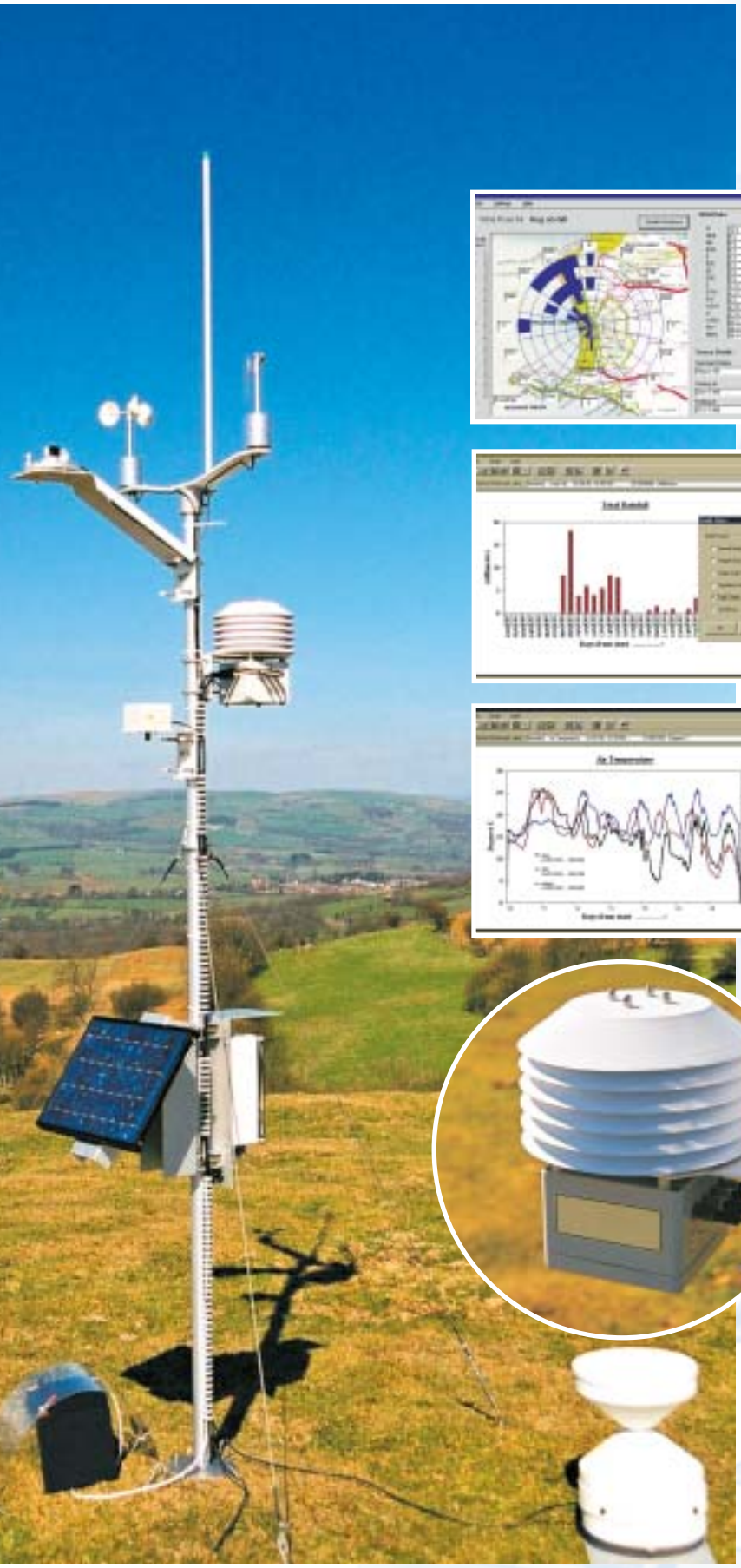
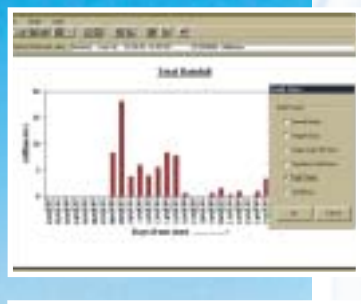
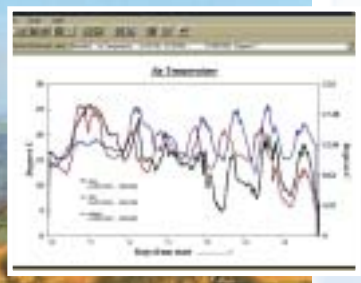






- Water Resource Studies.
- Agricultural & Crop Research.
- Environmental Studies.
- Commercial Farmers.
- Leisure Industry.

Software supplied with the Automatic Weather Station can be used to determine the following:

- Water Balance
- Total Rainfall
- Windrose
- Site Overlays
- Evapo-transpiration
- Historical Weather records

Wagtech offer a range of standard monitoring systems for specific applications. These are supplied fully assembled and ready to start. No special skills are required to operate them and the data can be processed easily using the computer software supplied.

The Automatic Weather Station shown opposite, comprise a datalogger mounted within a weatherproof case on a 2m frame. Power supply is via internal alkaline batteries with alternative options available. Different communication options are also available to enable the weather data to be retrieved at anytime.

AUTOMATIC WEATHER STATIONS

Purchase details

Wagtech Automatic Weather Station:
Comprises sensors for measuring all the key weather parameters i.e, wind speed, wind direction, air temperature, relative humidity, rainfall and solar radiation. Supplied complete with datalogger, 2m frame, battery pack and computer software.

Wag-WE60800

Wagtech Hydrological Monitoring Station:
Comprises sensors for measuring wind speed, wind direction, rainfall and water level (0-10m). Supplied complete with datalogger, 2m frame, solar charger unit, re-chargeable battery pack and computer software.

Wag-WE60825

Wagtech Windspeed & Direction Monitor:
Comprises sensors for measuring wind speed and wind direction. Supplied complete with datalogger, frame, re-chargeable battery pack.

Wag-WE60850

Accessories

Sensors:
Our standard systems use the most common weather sensors. However, a wide range of sensors are available for use with the weather station. These are Air Temperature, Relative Humidity, Wind speed, Total Solar Radiation, PAR Quantum, UVA, Barometric Pressure, Soil Temperature, Rain Gauge, Surface Wetness, Tensiometer and Water Level.

Please contact Wagtech International if you require a non standard Automatic Weather Station using the above range of sensors.

Power supply:
Wagtech Automatic Stations are fitted with alkaline batteries as standard. These will have a lifetime of 4-6 months depending on operating temperature, frequency of logging and data download.

Solar Power Unit: for use with standard datalogger Wag-WE60854

Communications & Computer Software:
The standard weather station is supplied with a 2m long RS232 communications cable and standard downloading software. A laptop computer is required to retrieve the data on site. Additional software is available to display the data, build graphs and windroses etc and to monitor the operation of up to 25 weather stations.
Other options include:

- Permanent cable link which is used with mains power supply and the communications distance is no more than 1km.
- Line modem link also uses the mains power supply and standard telephone connection.
- GSM Modem unit is available to enable communication with the station 24 hours a day using the local cell phone network.

Laptop Computer Wag-WE60862

Permanent Cable Link (per meter) Wag-WE60864

Line Modem Link (per meter) Wag-WE60866

GSM Modem Unit Wag-WE60868

Solar Power Supply for use with GSM Modem Link. Wag-WE60870

Deluxe Software for use with the standard datalogger to display the weather data, build graphs and windrose etc.
Wag-WE60872

Deluxe Auto software for use with up to 25 weather stations to monitor and download data automatically.
Wag-WE60874

AUTOMATIC WATER QUALITY MONITORING STATIONS (AWQS)

Field-based, modular "Connect and Go" data collection platform designed to collect and transmit water quality and meteorological data to a base station PC, where it can be analysed in real-time and used to understand and manage environments.

Based around the Wagtech Data Acquisition System (DAS) which, can be deployed in a remote field location, - e.g. on a buoy or shoreline, or mounted on a portable aluminium tripod for installation on earth or gravel surfaces.

The DAS has a direct connection using "Plug and Play" type connectors for the meteorological sensors and multi-parameter water quality monitors/sensors. Sensors are plugged into the DAS on-site without the need for wiring or user programming and are automatically detected and configured using Windows based software installed on the base station PC.

- Data Acquisition System (DAS) with extended memory.
- Windows based Telemetry Application software.
- PVC mounting pole for water quality logger.
- Meteorological Sensors including windspeed and direction, RH, Air Temperature and 4.5m cable.
- Water Quality sensors – select from list shown on page 55, Wag-WE50060 to Wag-WE50090.
- Rugged 2.4m field cable.
- 12V rechargeable battery.
- RF Cable.
- 10W Solar Power Kit.
- 3m Portable Aluminium Tripod Tower.

Specifications

Wagtech Data Acquisition System

Remote Data Acquisition System

Electronic Hardware	1Mb data storage

Data Communications

Direct Cable	RS-232
Radios	0.5-2Watt (simplex), VHF, UHF
Telephone Modem	Hayes compatible
Cellular Modem	Wireless phone modem (CDMS, GSM, CDPD, AMPS)

Data Management

Hardware	Eco Watch DCP™, compatible with Windows™ NT, Windows™ 98, Windows™ 2000

Power

Battery	Sealed lead-acid gel type, 12VDC
Line	100 to 240VAC, 50 to 60Hz
Solar	10-30Watt

Environmental

Operating Temperatures	-40 to +60°C
Enclosure	33 x 38 x 15.2cm fiberglass

Purchase details

Wagtech Automatic Water Quality Monitoring Station (AWQS): Wag-WE60900

N.B: Select Water Quality Monitor/Sensor from list on page 55, i.e Wag-WE50060 to Wag-WE50090.

General Laboratory

A complete equipment solution to address the typical requirements of a Water Quality Testing Laboratory.

The A-Z of general laboratory equipment has been compiled by Wagtech in consultation with accredited Water Quality Testing laboratories and offers the customer a blueprint for designing and equipping their laboratory. The A-Z details all the equipment necessary to allow the full range of Water Quality tests and procedures to be performed.

AUTOCLAVE: PORTABLE ELECTRIC

Portable electric autoclave for sterilization of instruments and glassware in the field.

Stainless steel chamber, 280mm i.d. and 355mm height, giving a capacity of 22 litres.

Features include:

- Adjustable safety valve
- Pressure gauge
- Air-release lock
- Lid clamp

Purchase details

Autoclave: Portable Electric:
Supplied complete with electronic controller for variable cycle temperatures and times, with LED display. Wag-WE70000

Accessories:

Dressing Drum, Stainless Steel, Large	Wag-WE70002
Dressing Drum, Stainless Steel, Small	Wag-WE70004

AUTOCLAVE: TOP-LOADING

- Top-Loading Autoclave.
- Secure micro-processor control.
- PIN restricted user programming.
- Swiftlock single action closure.
- Holdwarm facility for Media preparation.
- 316L stainless steel pressure vessel.
- Temperature range 100-138°C (0.2-2.4 bar).
- Integral cooling locks.
- Audible & Visual Alarms.
- Over temperature water cut-out.

Specifications

Autoclave Top-loading

Electric (heaters in chamber) or direct steam	Electric
Volume	110 L
Chamber Diameter	456mm
Chamber Depth	588mm
Loading Height	912mm
Overall Width	660mm
Overall Depth	840mm
Overall Height (Inc: controller)	1190mm
Power Supply	220/240V, 50Hz, 1/3-phase

Purchase details

Autoclave: Top-loading	Wag-WE70010

Accessories:

Stainless Steel Wire Basket, Large	Wag-WE70014
Stainless Steel Wire Basket, Small	Wag-WE70016

BALANCE: ANALYTICAL

	Capacity	Readability	Pan Size
Wag-WE70030	42g/160g	0.01mg/0.1mg	85mm Ø
Wag-WE70032	70g	0.01mg	85mm Ø
Wag-WE70034	100g	0.1mg	100mm Ø
Wag-WE70036*	100g	0.1mg	100mm Ø
Wag-WE70038	160g	0.1mg	100mm Ø
Wag-WE70040*	160g	0.1mg	100mm Ø
Wag-WE70042	250g	0.1mg	100mm Ø
Wag-WE70044*	250g	0.1mg	100mm Ø
Wag-WE70046	300g	0.1mg	100mm Ø

* Models with external calibration

Professional series of analytical balances

- Large graphical LCD display with backlight and function icons.
- Available in two versions – with motorised internal or external calibration(* see table).
- Selectable automatic calibration due to temperature variations.
- Large weighing pan and chamber with 3 door windshield.
- 16 weighing units including 1 user programmable custom unit.
- Bi-directional RS-232 interface for GLP compliant reports and connection to a computer or printer.
- Date and time.
- Capacity tracker.
- Below pan weighing facility.
- 7 selectable weighing units.

BALANCE: TOP-LOADING

	Capacity	Readability	Pan Size
Wag-WE70050	210g	1mg	128 x 128mm
Wag-WE70052	720g	1mg	128 x 128mm
Wag-WE70054	1200g	0.01g	165 x 165mm
Wag-WE70056	2100g	0.01g	165 x 165mm
Wag-WE70058	4100g	0.01g	165 x 165mm

Reliable series of Top-Loading balances

- Large LCD display.
- Sealed keypad.
- Dual tare keys.
- Good Laboratory Practice (GLP) compliant software package for calibration print out.
- Digital filters and suppression of the last digit on the display.
- Functions include parts counting and percentage weighing.
- Push-button calibration.
- Bi-directional RS-232 interface for GLP compliant reports and connection to a computer or printer.
- Below pan weighing facility.
- All models with 1mg readability include a square glass windshield as standard.
- All models have external calibration.

An economical range of portable digital balances are also available please contact our sales department for further details

CENTRIFUGE, VARIABLE SPEED

Brushless Drive Centrifuge

- Automatic rotor recognition.
- LED display of speed and time.
- Digital control of parameters.
- Program and Run in rpm or rcf.
- Automatic soft start.
- 10 program memory.
- 1-90 second pulse (quick spin).

Specifications

Speed (rpm)	1000-12,000
Max Rcf	13,500
Timer	0-90mins
Dimension (mm)	285 X 400 X 455
Weight	22kg

Purchase details

Variable Speed Centrifuge	Wag-WE70066

Accessories:

4 x 100ml Swing Out Rotor	Wag-WE70070
High Speed Fixed Angle Rotor, 24 x 2ml	Wag-WE70072
Med. Speed Fixed Angle Rotor, 8 x 50ml	Wag-WE70074
6 x 1.5ml Tube Holders x 4	Wag-WE70076
Transparent Lid Including Seals x 4	Wag-WE70078
12 x 5.0ml Tube Holders x 4	Wag-WE70080

COLONY COUNTER

Colony Counter

- Pressure Sensitive Counting System.
- Can be used with any probe or felt tip pen.
- Digital readout from 0-999.
- Audible confirmation of each count.
- Built in averaging system.
- Choice of light or dark background.

Designed for rapid and accurate counting of bacterial and mould colonies.
Easy to use: Simply place the petri-dish on the electronic pressure pad and touch the dish with a felt pen to mark each colony in turn.

Touch pressure causes a count to be registered on the digital display and an audible tone confirms each count made (this can be turned off if required).

Purchase details

Colony Counter:
Supplied complete with Wolffhuegel graticule and dish centring adaptors, to facilitate use with 50-90 mm dishes.

Wag-WE70090

Accessory:

Magnifier	Wag-WE70094

CONDUCTIVITY METER: ADVANCED BENCH-TOP

WG BenchScan CON 2

- Bench meter for measuring Conductivity and TDS with Auto-ranging capability for fast response, with ±1% full scale accuracy.
- Up to 1- or 5-point automatic or manual calibration.
- Non-volatile memory stores and recalls up to 50 data sets of Conductivity, TDS readings with temperature (°C/°F).
- Advanced setup allows you to customise meter parameters.
- Supplied with Conductivity electrode (k=1), and integral electrode holder.

	Conductivity	TDS	Temperature
Range	0 to 19.99, 199.9, 1999 µS/cm 0 to 19.99, 199.9 mS/cm	0 to 9.99, 99.9, 999.9 ppm; 9.99, 99.9 ppt, max of 199.9 ppt (depending on factor setting)	-10 to 110.0°C 14.0 to 230°F
Resolution	0.01, 0.1,1 µS/cm; 0.01, 0.1 mS/cm	0.01, 0.1, 1 ppm; 0.01, 0.1,1 ppt	0.1°C, 0.1°F
Accuracy	±1% full scale + 1 digit		±0.3°C; ±0.5°F
Calibration	5 points (1 per range)		±5.0°C; ±9.0°F (0.1°C increments)

Purchase details

WG BenchScan CON 2 Bench Meter
Conductivity/TDS/°C/°F — Wag-WE30320

see page 42 Digital Instruments section also.

DEIONISER

Laboratory deioniser providing high quality water as and when required.

- Water instantly available.
- Simple to install - wall mounting.
- Colour change resin.
- Supplied with dispensing spout.

Specifications

Max Flow Rate	60 l/h
Max Input Pressure	90psi (6 bar)
Mains Water Connection	0.5" BSP hosetail
Typical Water Quality	0.1 to 10µS/cm
Typical Output, water areas:	
Hard (400-500ppm)	80-100 litres
Mid (400-500ppm)	150-400 litres
Soft (400-500ppm)	500-900 litres
Overall Dimensions	385 X 92 X 100mm
Weight	2.5Kg

Purchase details

Deioniser: Wag-WE70100

Accessories
Spare Cartridge — Wag-WE70104

Handheld Dispensing Gun — Wag-WE70106

DISSOLVED OXYGEN METER

WG BenchScan DO5

For full technical specification please see Digital Instruments on page 44

- Measures Dissolved Oxygen in % saturation, ppm and mg/l.
- Performs Biological Oxygen Demand (BOD).
- Automatic calibration at100% and independent 0% calibration enhances sensitivity for low oxygen measurement.
- Automatic compensation after manual input of barometric pressure and salinity values for variations in oxygen solubility to ensure optimum results.
- Includes a self-stirring polarographic BOD probe.

Purchase details

WG BenchScan DO5 Bench Meter
pH/Dissolved Oxygen/°C/°F
Wag-WE30260

FLAME PHOTOMETER

Low temperature, single channel flame photometer designed for the routine determinations of Sodium, Potasium, Calcium, Barium and Lithium.

With in-built automatic flame failure detection for user safety these products are ideal for use in clinical, industrial and educational applications.

Specifications

Ranges	0-199.9 ppm
Limits of detection	Na/K ≤ 0.2ppm Li ≤ 0.25ppm Ca ≤ 15ppm Ba≤ 30ppm
Reproducibility	≤ 1% / Coefficient of variation for 20 consecutive samples using 10ppm Na set to read 50
Linearity	Better than 2% when concentration of 3ppm Na/K and 5ppm Li are set to read 100
Specificity	Interface from Na, K and Li equal in concentration to test element will be <0.5%
Recorder	Nominal 1.00V for a reading of 100.0
Services	Electrical: 90-125V or 190-250V @ 50/60Hz Air: Moisture and oil free 6 litre/minute @ 1Kg/cm² (14 psi) Fuel: Propane, Butane, Natural Gas or L.P.G.

Purchase details

Flame Photometer:
Digital, fitted with electronic flame fail safe and supplied with Na & K filters, connecting hoses and clips, compressor plug, drain trap, fuses & instruction/service manual. For use on 230V 50Hz. Wag-WE70120

Accessories

Air Compressor	Wag-WE70124
Natural Gas Regulator	Wag-WE70126
Propane Regulator	Wag-WE70128
Lithium Filter	Wag-WE70130
Calcium Filter	Wag-WE70132
Barium Filter	Wag-WE70134

GENERAL LABWARE

A comprehensive range of routine general laboratory glass, ceramic and plasticware.

WE 70150	Beakers – low form, borosilicate glass, with spout and graduations, 100ml, pk 10
WE 70152	Beakers – low form, borosilicate glass, with spout and graduations, 250ml, pk 10
WE 70154	Beakers – low form, borosilicate glass, with spout and graduations, 600ml, pk 10
WE 70156	Beakers – low form, borosilicate glass, with spout and graduations, 1000ml, pk 10
WE 70166	Beaker – polypropylene, with spout & approx graduations. Supplied with lid. 1000ml
WE 70168	Bottles, Reagent – clear borosilicate glass, graduated, with thread. Complete with blue screw cap and pouring ring. 250ml, pk 10
WE 70170	Bottles, Reagent – clear borosilicate glass, graduated, with thread. Complete with blue screw cap and pouring ring. 600ml, pk 10
WE 70172	Bottles, Reagent – clear borosilicate glass, graduated, with thread. Complete with blue screw cap and pouring ring. 1000ml, pk 10
WE 70174	Bottles, Sample – Round, wide neck, HDPE. With PP screw cap, 125ml, pk 5
WE 70176	Bottles, Sample – Round, wide neck, HDPE. With PP screw cap, 250ml, pk 5
WE 70178	Bottles, Sample – Round, wide neck, HDPE. With PP screw cap, 500ml, pk 5
WE 70180	Bottles, Sample – Round, wide neck, HDPE. With PP screw cap, 1000ml, pk 5
WE 70182	Bottle, Aspirator – Polyethylene, narrow neck. Capacity 25 litres. With screw cap, neck bore 50mm, side lifting handles and 12mm air-vented stopcock
WE 70184	Bottles, Wash – Capacity 1000ml, slope shoulder, narrow neck, LDPE.. Fitted with white PP closure. Pk 5
WE 70186	Burette – glass, soda-lime. Capacity 50ml, graduated. Straight bore with stopcock
WE 70188	Crucible – ceramic, low form, 45mm diameter, capacity 21ml, pk 10
WE 70190	Cover for crucible – internal diameter 45mm, pk 10
WE 70192	Dessicator – Borosilicate glass with 250mm internal diameter, knob lid and perforated zinc disc.
WE 70194	Dessicator Disc – Perforated porcelain, 250mm diameter
WE 70196	Dispensing Bottles – Polyethylene, with spouted dropper closure. Capacity 60ml. pk10

See the Wagtech Scientific and Laboratory Catalogue for the full range of available laboratory equipment.

GENERAL LABWARE

A comprehensive range of routine general laboratory glass, ceramic and plasticware.

WE 70198	Flask, Filter – borosilicate glass filtering flask with glass side hose connection. Capacity 1000ml. Pack 8
WE 70200	Flask, Erlenmeyer – borosilicate glass, wide neck & approx graduations, 250ml
WE 70202	Flask, Erlenmeyer – borosilicate glass, wide neck & approx graduations, 500ml
WE 70204	Flask, Erlenmeyer – borosilicate glass, wide neck & approx graduations, 1000ml
WE 70206	Flask, Erlenmeyer – borosilicate glass, wide neck & approx graduations, 2000ml
WE 70208	Flask, Volumetric – class A, borosilicate glass, with plastic stopper, 10ml
WE 70210	Flask, Volumetric – class A, borosilicate glass, with plastic stopper, 100ml
WE 70212	Flask, Volumetric – class A, borosilicate glass, with plastic stopper, 500ml
WE 70214	Flask, Flat Bottom – borosilicate glass, with narrow neck, 100ml
WE 70216	Flask, Flat Bottom – borosilicate glass, with narrow neck, 250ml
WE 70218	Flask, Flat Bottom – borosilicate glass, with narrow neck, 500ml
WE 70220	Flask, Flat Bottom – borosilicate glass, with narrow neck, 1000ml
WE 70222	Funnel, Polypropylene-general purpose, withstand temperatures up to 135°C, Top i.d. 35mm, pk 10
WE 70224	Funnel, Polypropylene-general purpose, withstand temperatures up to 135°C, Top i.d. 65mm, pk 10
WE 70226	Funnel, Polypropylene-general purpose, withstand temperatures up to 135°C, Top i.d. 140mm, pk 5
WE 70228	Glass Stirring Rod – one end flat paddle, other plain, length 200mm
WE 70230	Laboratory Tray – white PVC, unbreakable. Suitable for carrying Dimensions 524 x 236 x 27 mm (L x W x H)
WE 70232	Measuring Cylinder – Clear Polypropylene, printed graduations, stable hexagonal base, 250ml
WE 70234	Measuring Cylinder – Clear Polypropylene, printed graduations, stable hexagonal base, 500ml
WE 70236	Measuring Cylinder – Clear Polypropylene, printed graduations, stable hexagonal base, 1000ml
WE 70238	Measuring Cylinder – borosilicate glass, Class B with white graduations, pouring spout and hexagonal base, 250ml
WE 70240	Measuring Cylinder – borosilicate glass, Class B with white graduations, pouring spout and hexagonal base, 500ml
WE 70242	Measuring Cylinder – borosilicate glass, Class B with white graduations, pouring spout and hexagonal base, 1000ml
WE 70244	Mortar and Pestle – ceramic, diameter 160mm, capacity 500ml, pk 1

See the Wagtech Scientific and Laboratory Catalogue for the full range of available laboratory equipment.

GENERAL LABWARE

A comprehensive range of routine general laboratory glass, ceramic and plasticware.

WE 70246	Petri Dishes – special glass, autoclavable at 120°C, 60mm dia, pk18
WE 70248	Petri Dishes – special glass, autoclavable at 120°C, 100mm dia, pk18
WE 70250	Petri Dishes – special glass, autoclavable at 120°C, 120mm dia, pk18
WE 70252	Pipette – serological, graduated type 1, 1ml
WE 70254	Pipette – serological, graduated type 1, 2ml
WE 70256	Pipette – serological, graduated type 1, 5ml
WE 70258	Pipette – serological, graduated type 1, 10ml
WE 70260	Pipette Filler, – with thumb wheel filling and emptying control, release valve lever and cone shape elastic pipette holder. Colour coded Blue for identification. For pipettes up to 2.0ml.
WE 70262	Pipette Filler, – with thumb wheel filling and emptying control, release valve lever and cone shape elastic pipette holder. Colour coded Green for identification. For pipettes up to 10.0ml.
WE 70264	PVC Tubing – Flexible, transparent non toxic general purpose tubing. 5 x 8mm (Bore x o.d.), 50m coil
WE 70266	Rubber Stoppers – assorted pack. Natural rubber. Comprising five each of nos: 7,8,9,10,11, 13,15,17,19,21 and 23, two each of 25,27,29,31,33 and 35
WE 70268	Specimen tube – neutral glass. Size 72 x 77mm, capacity 30ml. pk 209
WE 70270	Snap-on-cap for specimen tubes – opaque polyethylene. pk 100
WE 70272	Tubes, Durham – Neutral glass for fermentation tests. Size 35 x 8mm.pk 250
WE 70274	Test Tubes – Pyrex Borosilicate Glass, rimless, size 160 x 16mm with 1.2mm wall. pk 100.
WE 70276	Test Tubes – Pyrex Borosilicate Glass, rimless, size 180 x 16mm with 1.2mm wall. pk 100.
WE 70278	Test Tubes – Pyrex Borosilicate Glass, with rim, size 180 x 16mm with 1.2mm wall. pk 100.
WE 70280	Test Tube Caps – red, anodised aluminium with internal wire spring, which grips the inside of the tube. For tube 16-17mm o.d. Supplied in pk 100.
WE 70282	Test Tube Caps – red, anodised aluminium with internal wire spring, which grips the inside of the tube. For tube 17-18mm o.d. Supplied in pk 100.
WE 70284	Weighing Scoop – Polypropylene Funnel, capacity 10 / 35ml

See the Wagtech Scientific and Laboratory Catalogue for the full range of available laboratory equipment.

HOTPLATE

- Choice of top plate material.
- Large plate area ideal for heating one large vessel or several smaller ones.
- Accommodates beakers up to 10 litres.
- Hotplate temperature controlled by easy to use dial.

Wag-WE70300

Has a glass ceramic top which has excellent chemical resistance and allows much higher plate temperature.

Wag-WE70305

Has a robust aluminium/silicon alloy top plate which gives even plate temperature and will withstand the knocks of everyday use.

	Wag-WE70300	Wag-WE70305
Plate Material	Glass ceramic	Al/Si alloy
Plate Dimensions (mm)	300 x 300	300 x 300
Heater Power (W)	1200	1200
Max. plate temp (˚C)	450	300
Overall Dimensions (mm) (w x d x h)	300 x 365 x 105	300 x 365 x 105
Net weight (Kg)	6	6
Electricity supply	230V, 50-60Hz	230V, 50-60Hz

Purchase details

Hotplate, ceramic top, analogue	Wag-WE70300
Hotplate, metal top, analogue	Wag-WE70305

INCUBATOR: COOLED

Wagtech 90 Litre Incubator

This small dimension refrigerating incubator has been built purposely for the incubation of manometric BOD measurement units; allowing 1, 6 or 10 bottle system to be incubated.

90L Incubator Wag-WE20100 et seq.

Wagtech 220 Litre Incubator

This complete and advanced incubator is intended for any use which requires precise and constant temperature. The continuous internal air circulation and the thermostating microprocessor controlled Auto-Tuning system allows a uniform temperature within the internal chamber.

220L Incubator Wag-WE20130 et seq.

For both products see page 30 for full technical specifications and purchase details.

INCUBATOR: GENERAL PURPOSE

- Aluminium coated with a mild steel interior.
- Capacity of 50/100 litres.
- Direct reading hydraulic control of temperature over the range ambient +5° to 100°C x ±0.1°C.

	50L	100L
Ext: Dimensions (mm)	615 x 590 x 422	735 x 590 x 567
Int: Dimensions (mm)	325 x 490 x 460	455 x 490 x 460
Volume Approx (litres)	50	100
Shelf Positions	3	4
No of Shelves Supplied	2	3
Shelf Size (mm) W x D	240	360
Power Rating (W)	455 x 270	455 x 415
Net Weight (Kg)	500	750
Fluctuation (Hydraulic)	±0.25°C at 38°C	
Fluctuation (Digital)	±0.1°C at 38°C	

Potaflex Incubator System

The incubator has a temperature range of +20°C to 50°C. Typically temperatures are set at 37°C for total coliforms and 44°C for faecal coliforms and faecal streptococci However the flexible range can be set at other temperatures such as 42°C for pseudomonas.

(See Page 14: for full technical specification).

Purchase details

General Purpose Laboratory Incubator, 50L:
Supplied complete with safety thermostat.

Wag-WE70312

General Purpose Laboratory Incubator, 100L:
Supplied complete with safety thermostat.

Wag-WE70314

Other capacity sizes available; please contact the sales department for further details.

Potaflex Incubator: Wag-WE70315

MICROSCOPE: MONOCULAR / BINOCULAR

- Economical, high performance monocular and binocular microscopes.
- Ideally suited for laboratories & clinical purposes.

Specifications

Eyepiece	WF 10x/18 mm
Head	Rotates 360° with fixation knob
Focussing Mechanism	Coaxial coarse and fine focussing knobs Tension control on coarse focus
Nose piece	Quadruple
Objectives	Semi-plan, 4x, 10x, 40x spring loaded and 100x oil immersion spring loaded
Object table	120 x 135mm
Specimen holder	Integrated with co-axial control knobs
Condenser	1.25 N.A, with iris diaphragm and adjustable pinion
Mains supply	90-230V
Illumination	12V-20W halogen with intensity control
Included accessories	Dust cover; Blue filter

Purchase details

Monocular Microscope:

Wag-WE70320

Binocular Microscope:

Wag-WE70324

MICROSCOPE: STEREO ZOOM

Ergonomic design offers full support whilst working.

- Ultra wide field 10x / 22mm eyepieces.
- Zoom range from 0.7 to 4,5x.
- Bilateral zoom control knobs for easy use.
- Stand with large working space and 100mm working distance.
- Base with incident and transmitted adjustable halogen illumination, 12V/15W. 230V-50Hz.

Purchase details

Microscope Stereo Zoom:
Supplied with two stage plates, black and white, milk glass plate, dust cover and rubber eye-caps in a polystyrene storage box.

Wag-WE70328

MIXER: VORTEX

Vortex Mixer

- Variable speed control between 200 and 2500rpm.
- Intermittent or continuous mode.
- Stable low profile body.
- Robust die-cast construction.
- Integral retort rod fixing allows vessels to be secured above the vortex action for long-term mixing.
- Ergonomic design.

Specifications

Speed	200 to 2500rpm
Orbit Diameter	4.2mm
Touch mode	Yes
Continuous mode	Yes
Dimensions (w x d x h)	135 x 215 x 78mm
Net weight	3.2Kg
Electrical supply	90 – 240V, 50/60Hz, 20W

Purchase details

Vortex Mixer: Wag-WE70332

OVEN: GENERAL PURPOSE

Other capacity sizes available; please contact the sales department for further details.

General purpose laboratory oven

- Aluminium coated with a mild steel interior. (stainless steel models also available)
- Capacity of 50/100 litres.
- Direct reading hydraulic control of temperature over the range 30° to 250°C x ±0.75°C fluctuation.
- Fan assisted circulation.

	50L	100L
Ext: Dimensions (mm)	615 x 590 x 422	735 x 590 x 567
Int: Dimensions (mm)	325 x 490 x 315	455 x 490 x 460
Volume Approx (litres)	50	100
Shelf Positions	3	4
No of Shelves Supplied	2	3
Shelf Size (mm) W x D	455 x 270	455 x 415
Power Rating (W)	1000	1250
Net Weight (Kg)	30	40
Fluctuation (Hydraulic)	±0.75°C	
Fluctuation (Digital)	±0.5°C	

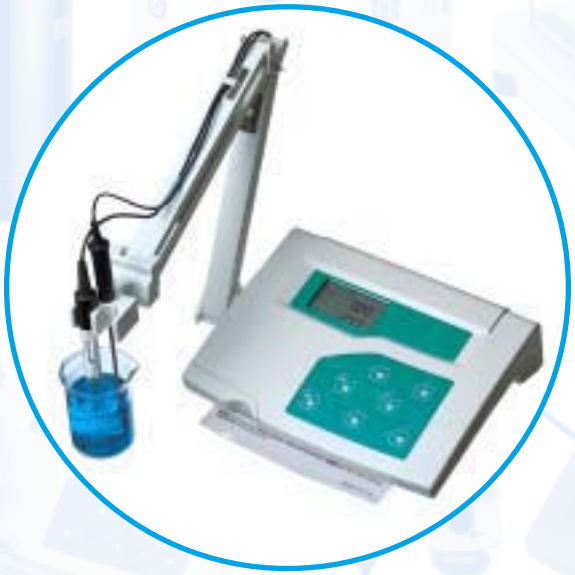
Purchase details

General Purpose laboratory Oven, 50L, 220/240V: Supplied complete with safety thermostat. Wag-WE70336

General Purpose laboratory Oven, 100L, 220/240V: Supplied complete with safety thermostat. Wag-WE70338

pH METER: BENCH-TOP

WG BenchScan pH 1



- Low cost but high performance meter for measuring pH, mV and Temperature.
- 0.1 mV resolution – useful for Ion concentration and ORP measurements.
- Multi-point pH calibration (up to 3 points).
- Non-volatile memory stores and recalls 50 data sets of pH and mV readings with temperature.
- Recorder output to link chart recorder or recording device for data analysis.
- Electrode slope/offset diagnosis, self-diagnostic messages, Ready indicator, and slide-out reference card.
- Supplied with pH electrode, integral electrode holder and temperature probe.

	pH	mV	Temperature
Range	0 to 14.00 pH	± 2000 mV	0.0 to 100.0 °C
Resolution	0.01 pH	0.1 mV (within ±199.9mV) 1mV (beyond ±200 mV)	0.1 °C
Accuracy	± 0.01 pH	±0.2 mV (within ±199.9mV) ±2mV (beyond ±200 mV)	±0.3 °C
Calibration	up to 3 points (USA or NIST pH buffer options)	±150 mV (1mV increments)	± 5.0 °C (0.1 ° increments)

Purchase details

WG BenchScan pH 1Economy Bench Meter: pH/mV/°C

Wag-WE30300

PORTABLE WATER TESTING LABORATORY: POTALAB

Potalab 1 is a portable microbiological and physico-chemical testing laboratory designed to assess the suitability of drinking water on-site. It provides bacteriological testing using the accepted method of membrane filtration and incubation of faecal and total coliforms as an indicator of the presence of other harmful bacteria and viruses. The physico-chemical instruments are used in combination to quickly examine a supply to determine if a more detailed microbiological examination is required. All equipment is easily packed within the aluminium case for complete portability.

(See Pages 2-6: for full technical specifications)

Purchase details

Potalab 1:
Portable water testing laboratory for microbiological and physico-chemical testing, for use in lab/field (weight 20Kg).

Wag-WE10010

PHYSICO-CHEMICAL LABORATORY

Wagtech CP1000 Physico-Chemical Kit

- The ultimate field resource incorporating the most comprehensive range of digital instrumentation.
- Includes the Photometer 8000 digital photometer for reliable, accurate and precise analysis of chemical testing.
- Digital hand held instrumentation for Turbidity, pH, Temperature, Conductivity and TDS.
- Reagent starter pack available for Groundwater and Public Health testing.
- Supplied in a compact and rugged aluminium carry case.

(See Page 19: for full technical specifications and full purchase details)

Purchase details

Wagtech CP1000 Physico-Chemical Kit:

Wag-WE10720

REAGENTS & CONSUMABLES

A full range of reagents in tablet form for use in water quality tests is shown on pages 5 & 10. In addition Wagtech International can also supply a complete range of reagents, chemicals and consumables for most laboratory analysis. Please contact the sales department for a quotation.

REFRIGERATOR: LABORATORY

Laboratory Refrigerator:

- Spark-free interior.
- Maintains internal air temperature between 0 and +10°C.
- Stainless steel interior.
- Lockable castors.
- Lockable door for product security.
- Fully automatic defrost.
- CFC & HCFC free refrigeration system & insulation.

Specifications

Laboratory Refrigerator

External Dimensions(mm)	1665(H) x 685(W) x 910(D)
Packed Dimensions(mm)	1810(H) x 770(W) x 950(D)
Internal Dimensions(mm)	1175(H) x 553(W) x 697(D)
Capacity(Litres)	441
Power(W)	220
Electrical Supply	220/240V, 50Hz
Storage Shelves/Drawers	5

REFRIGERATOR / FREEZER LABORATORY

Laboratory Fridge Freezer for samples, volatile liquids, reagents, chemicals & poisons.

- Spark-free interior.
- Maintains internal air temperature between 0 and +10°C.
- Maintains internal freezer air temperature at -18°C or lower.
- Lockable doors with two keys for product security.
- Fully automatic defrost of refrigerator.
- CFC & HCFC free refrigeration system & insulation.

Specifications

Laboratory Refrigerator/Freezer

External Dimensions(mm)	1486(H) x 530(W) x 630(D)
Packed Dimensions(mm)	1520(H) x 580(W) x 690(D)
Internal Dimensions(mm)	
Fridge	490(H) x 443(W) x 469(D)
Freezer	775(H) x 409(W) x 445(D)
Capacity(Litres)	Fridge: 99 Freezer: 110
Power(W)	85
Electrical Supply	220/240V, 50Hz
Storage Shelves/Drawers	2 shelves, 1 drawer

Purchase details

Laboratory Refrigerator:	Wag-WE70350
Laboratory Refrigerator/Freezer:	Wag-WE70352

SHAKER: ORBITAL/RECIPROCATING

Laboratory Shaker

- Available with orbital or reciprocating action.
- Variable speed with soft start.
- Any size or mix vessels.
- Fully adjustable cradle system.

	Wag-WE70360	Wag-WE70368
Platform Size	310 x 310mm	310 x 310mm
Speed Range	50-25rpm	50-200 strokes/min
Orbit / Amplitude	16mm	20mm
Overall Dimensions (mm) (w x d x h)	360 x 360 x 200	360 x 360 x 200
Maximum Load	10Kg	5Kg
Net weight	11Kg	11Kg
Electricity supply	230V, 50Hz, 50W	230V, 50Hz, 50W

Purchase details

Orbital Shaker:
Supplied and fully complete with platform and four rubber covered securing bars.
Wag-WE70360

Accessory Platform:
510 x 510mm platform and six rubber covered securing bars. (for use with Wag-WE70360 only)
Wag-WE70362

Reciprocating Shaker:
Supplied and fully complete with platform and four rubber covered securing bars.
Wag-WE70368

SPECTROPHOTOMETER

Spectrophotometer

- Wavelength 320-1100nm VIS, and 190-1100nm UV/VIS.
- High performance split-beam optics.
- Full scanning capability.
- Spectral addition & subtraction.
- Photometrics, spectrum, kinetics, multi-wavelength and quantitation operating ranges.
- 1st-4th derivative and post scan analysis.
- Method and results storage.
- Graphical User Interface (GUI).
- Customised LCD display.
- RS232 and analogue outputs.

Specifications

Wavelength Range	320-1100nm (visible range) 190-1100nm (UV-VIS Range)
Resolution	0.1nm
Accuracy	±1.0nm
Bandwidth	1.8nm
Grating	1200 lines/mm
Transmittance Range	0 to 199.9%T
Resolution	0.1%T
Accuracy	±1.0%T@10%T
Stray Light	<0.05%T@340 & 220nm
Absorbance Range	-3.000 to 3.000A
Resolution	0.001A
Accuracy	0.005A@1.0A
Concentration Range	-300 to 9999 Conc (resolution dependent)
Resolution	0.001/0.01/0.1/1
Units	ppb, ppm, µg/l, mg/l, M, %, blank
Photometric Noise	<0.001A@0A
Photometric Stability	<0.001A/hr
Light Source	Tungsten halogen (VIS), Deuterium (UV/Vis)
Size	520 x 330 x 180mm (w x d x h)
Weight	15kg

Purchase details

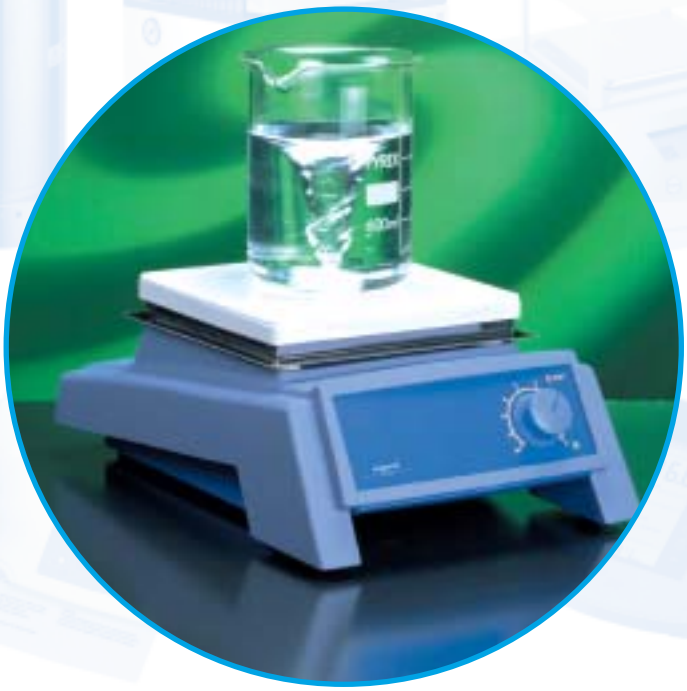
Visible Range Spectrophotometer (320-1100nm):
(without printer) supplied with 230V un-terminated mains lead, serial mouse, mouse mat, pack 100 (3.5ml) disposable cuvettes, 8 position multi-cell changer and instruction manual. 230V/50Hz

Wag-WE70370

UV/Visible Range Spectrophotometer (190-1100nm):
(without printer) supplied with 230V un-terminated mains lead, serial mouse, mouse mat, pack 100 (3.5ml) disposable cuvettes, 8 position multi-cell changer and instruction manual. 230V/50Hz

Wag-WE70380

STIRRER: MAGNETIC



Magnetic Stirrer

- A robust stainless steel top.
- Ensures a very powerful coupling and stirring action.
- Spillproof design which helps deflect spills away from the controls and the user.
- Powerful magnets for strong stirring actions.

Plate Material	Stainless Steel
Plate Dimensions (mm)	160 x 160
Stirrer speed, rpm	100-1500
Max. stirring capacity, litres	15
Overall Dimensions (W x D x H) mm	190 x 300 x 110
Net weight (Kg)	3.2
Electricity supply	230V, 50Hz, 50W

Purchase details

Magnetic Stirrer:
Fully complete with a stainless steel plate.
Wag-WE70402

STIRRER-HOTPLATE: MAGNETIC

Magnetic Stirrer Hotplate

- A robust aluminium top.
- Advanced safety features: Flashing 'Hot' warning light, Spillproof design, Independent safety circuit to protect against overheating.
- Microprocessor control for accurate temperature setting.

Plate Material	Aluminium/Silicon alloy
Plate Dimensions (mm)	160 x 160
Heated Area (mm)	160 x 160
Heater Power (W)	700
Max. Plate Temp (°C)	325
Stirrer speed, rpm	100-1500
Max. stirring capacity, litres	15
Overall Dimensions (W x D x H) mm	190 x 300 x 110
Net weight (Kg)	3.4
Electricity supply	230V, 50Hz, 750W

Purchase details

Magnetic Stirrer-Hotplate:
Fully complete with an aluminium plate. Wag-WE70406

SUNDRY EQUIPMENT

A comprehensive range of miscellaneous laboratory equipment.

WE 70500	UV lamp, wavelength 365nm, 8W. For 220-240V, 50Hz, single phase supplies.
WE 70502	Spare UV Tube for above lamp.
WE 70504	Lab Vacuum Pump Oil-free diaphragm vacuum pump/compressor. Ideal for the majority of general purpose laboratory duties requiring low vacuum. Vacuum 280mbar, Pressure 1.8bar, Flow 14l/min, 4mm inlet/outlet. In polycarbonate splash-proof case. For 230V, 50Hz single-phase supplies.
WE 70510	Bunsen Burner Natural gas burner with control stopcock and pilot flame. With heavy, die-cast metal base and integral tube for 8mm flexible gas tubing. Burner tube o.d.= 13mm, height 124mm.
WE 70512	Manifold – Stainless steel 3-position manifold with PTFE stopcocks. For use with vacuum holders.
WE 70514	Crucible tongs Stainless steel with flat hinge. Overall length 200mm
WE 70516	Beaker brush Bristle head, 70mm di. x 150mm long, on wood handle. Overall length 400mm. pk 10
WE 70518	Flask brush Curved bristle head 50mm dia. x 100mm long. With hinged centre joint and rubber covered stem on wood handle. Overall length 380mm. pk 5.
WE 70520	Cylinder brush Nylon fan shaped head 65mm dia. x 120mm long, on wire handle. Overall length 650mm. Pk 5
WE 70522	Burette brush Bristle head 19mm dia. x 750mm long, on wire handle. For 50ml burette. pk 10.
WE 70524	Test tube brush Bristle fan shaped head on wire handle. 19mm dia. For 10 to 12mm dia. test tubes. pk 10.
WE 70526	Test tube brush Bristle fan shaped head on wire handle. 30mm dia. For 16 to 25mm dia. test tubes. pk 10.
WE 70528	Safety goggles Soft PVC frame with adjustable elastic headband and single, clear polycarbonate lens
WE 70530	Respirator Lightweight, foldable dust respirator. Individually wrapped. pk 20
WE 70532	Safety gloves – marigold Medium weight acrylonitrile rubber. Floc lined with finger and palm gripping surface. Size 8-(large) – other sizes available on request. Supplied in pack of 12 pairs.
WE 70534	Laboratory coats m/w White polyester/cotton. Front fastening with two side patch pockets and one breast pocket. Length approx 105cm. Size, large for men. Other sizes available on request.
WE 70535	White polyester/cotton. Front fastening with two side patch pockets and one breast pocket. Length approx 105cm. Size, large for women. Other sizes available on request.
WE10460	Absorbent pads and Membranes pk 200
WE10462	Absorbent pads and Membranes pk 1000

See the Wagtech Scientific and Laboratory Catalogue for the full range of available laboratory equipment.

SUNDRY EQUIPMENT

A comprehensive range of miscellaneous laboratory equipment.

WE 70538	Aluminium foil 75m roll length x 450mm foil width
WE 70540	Micro-pipettor (40-200µl) Variable volume, subdivision 1µl, accuracy ±1.5 to 0.8%, precision ±0.3 to 0.2%
WE 70542	Micro-pipettor (200-1000µl) Variable volume, subdivision 10µl, accuracy ±0.6 to 0.5%, precision ±0.3 to 0.2%
WE 70544	Micro-pipettor (1000 to 5000µl) Variable volume, subdivision 100µl, accuracy ±0.8 to 0.6%, precision ±0.2%
WE 70546	Tips for micro-pipettors 200µl Range 1 to 200µl, colour yellow, pk 1000.
WE 70548	Tips for micro-pipettors1000µl Range 100 to 1000µl, colour blue, pk 1000.
WE 70550	Tips for micro-pipettors 5000µl Range 500 to 5000µl, colour white, pk 500.
WE 70552	Micro-pipettor bench rack. Perspex bench rack for holding up to five variable volume micro-pipettors
WE 70554	Retort stand base A-shape, cast iron, nesting retort stand base. Side length 200mm. Rod fitting hole has locking screw for domed end rods and tapped hole to accept screw end rods. Weight 2.5kg.
WE 70556	Retort rod Mild steel retort rod. With screw end 10mm x 1.5mm. 600mm length x 12.5mm diameter.
WE 70557	Retort rod Zinc-plated steel retort rod. With domed end. 600mm length x 12.5mm diameter.
WE 70558	Stainless steel wire basket For holding a variety of small glassware and plasticware. Rectangular, 100mm cube.
WE 70560	Straight Bosshead Natural finish alloy. With blue plastic headed nickel plated screws. For rods up to 16mm diameter.
WE 70562	Clamp Natural finish alloy. With three prong rubber covered jaws. Accepts articles up to 70mm. Rod 8mm diameter.
WE 70564	Glass microfibre filter paper 24mm diameter. Box 100.
WE 70566	Whatman Grade 1 Filter paper Grade No.1. Qualititative general purpose. 150mm diameter. Box 100.
WE 70568	Forceps, Fine Point Stainless steel sprung, straight flutes with guide pin. Overall length 150mm.

See the Wagtech Scientific and Laboratory Catalogue for the full range of available laboratory equipment.

SUNDRY EQUIPMENT

A comprehensive range of miscellaneous laboratory equipment.

WE 70570	Forceps, Blunt Stainless steel sprung, straight flutes. No guide pin. Overall length 150mm.
WE 70572	Slide Forceps With spatulate ends for manipulating slides and cover slips. Nickel plated.
WE 70574	Vinyl Gloves – Tru-touch Lightweight disposable stretch vinyl with improved finger sensitivity. Size – Large. (other sizes available on request). pk.100
WE 70576	Parafilm M sealing film Two-way stretch. Supplied in 76m (l) x 100mm (w) roll. In dispenser box.
WE 70578	Disposable Scalpel Blades Carbon steel, non-sterile. Blade no.24. 5 blades per foil wrap. pk.100
WE 70580	Blade Handel For use with disposable scalpel blade. Nickel. Supplied singly
WE 70582	Scissors heavy duty Side bent with polished steel blades. Blade length 125mm. Overall 225mm.
WE 70584	Scissors blunt Stainless steel. Straight, closed shanks
WE 70586	Spatula Stainless steel. Straight spoon one end. Length 210mm
WE 70588	Autoclave tape Self-adhesive paper with indicating stripes which change colour after being autoclaved. Tape width 19mm. Supplied in roll of 55m.
WE 70590	Test-tube holder For tubes up to 19mm diameter. Hardwood with steel spring. pk.10
WE 70592	Test Tube rack Nylon coated wire. For 36 x 13mm tubes.
WE 70594	Test Tube rack Nylon coated wire. For 24 x 16mm tubes
WE 70596	Cast Iron Tripod Triangular top. Side length 150mm
WE 70598	Gauze Open mesh. Size - 150 x 150mm
WE 70599	Platinum wire 28 swg. For flame tests. Fused into glass handle. Overall length 110mm.

See the Wagtech Scientific and Laboratory Catalogue for the full range of available laboratory equipment.

TURBIDITY METER: BENCH-TOP

WG BenchScan TB6

- Research grade bench turbidity meter.
- White / Infra-Red light sources available.
- Auto-ranging up to 1000 NTU.
- Up to 3-points push-button automatic calibration.
- Auto-calibration prompt and self-diagnostic messages.
- RS232 Interface.
- Built in real-time clock for Good Laboratory Practice (GLP).
- Supplied with calibration kit.

	Turbidity NTU
Principle	Nephelometric non-ratio
Range	0 to 1000 NTU
Resolution	0.01 / 0.1 / 1.0 NTU
Accuracy	±2% of reading +0.01 NTU
Calibration	Automatic (up to 3-points)

Purchase details

WG BenchScan TB6 Bench Meter, Infra-Red: Wag-WE30350

WG BenchScan TB6 Bench Meter, White: Wag-WE30355

Accessories

Pour-through Assembly: Wag-WE30356

Pk.3 Sample Cuvettes: Wag-WE30358

Please also see page 44 in the Digital Instruments section.

TRACE ELEMENT ANALYSER

Portable Trace Element Analyser

The PTEA is a portable analyser designed to identify and measure the concentrations of heavy metals ions in a wide range of matrixes. It can be used either as a stand-alone unit or connected to a laptop or desktop computer running the supplied VAS software.

(See Pages: 22 & 23 for full technical specification)

Purchase details

Portable Trace Element Analyser: Wag-WE10800

WATER STILL

Compact economy laboratory water still

- Output 4 litres/hr single distilled.
- 3kW chromium plated heater.
- Safety thermostat.
- Pyrex glass boiler and double coil condenser.
- Plumbing connections via screw-thread connectors.
- Easily de-scaled.
- Bench or wall mounting.
- Water consumption 60 litres/hr Optional pour through assembly.

	Water Still
Output litres/hr	4, single distilled
pH	5.0 - 6.5
Conductivity µScm-1	3.0 - 4.0
Resistivity MOhm-cm	0.25 - 0.3
Temperature (°C)	25 - 35
Pyrogen Content	Pyrogen free*
Water Supply	1 litre/min 3-100psi
Power Requirement	3kW
Dimensions (W x D x H) mm	500 x 150 x 450

Purchase details

Water Still:
Water Still for 220-240V, 50/60Hz single phase supply.

Wag-WE70640

analytical INSTRUMENTATION...

Environmental pollution is an age-old trade mark of man and in recent years as technology has progressed, populations have increased and standards of living have improved. So the demands on the environment have increased, with all the attendant problems for the ecosystems. Combustion of fossil fuel, disposal of waste materials and products, treatment of crops with pesticides and herbicides have all contributed to the problems.

Every year many new substances are synthesised that differ radically from the natural products that exist in bio-systems. it follows that detailed studies must be made of their effect on the environment and their method of movement through the ecosystem.

Many of the compounds are not biodegradable and will thus progressively pollute the environment. The materials of interest are present in environmental samples at very low concentrations and are often to be found among a myriad of other compounds from which they must be separated and identified. It follows that Environmental agencies and laboratories worldwide are requiring progressively lower detection limits of contaminants in water and other environmental samples.

For this reason access to the latest analytical technology and a knowledge of its application in the environmental field is essential.

Due to a well-established relationships throughout the scientific community and industry in general, Wagtech International has the capability to design and engineer complete analytical solutions for the end-user based on specific individual requirements. Our own engineers are able to install and commission a wide range of analytical instruments, and also provide the end user with comprehensive training.

Wherever necessary, we are also able to draw upon the resources from many of our academic partners, thus ensuring that we have the capability to deliver a complete and sustainable water analysis or environmental laboratory.

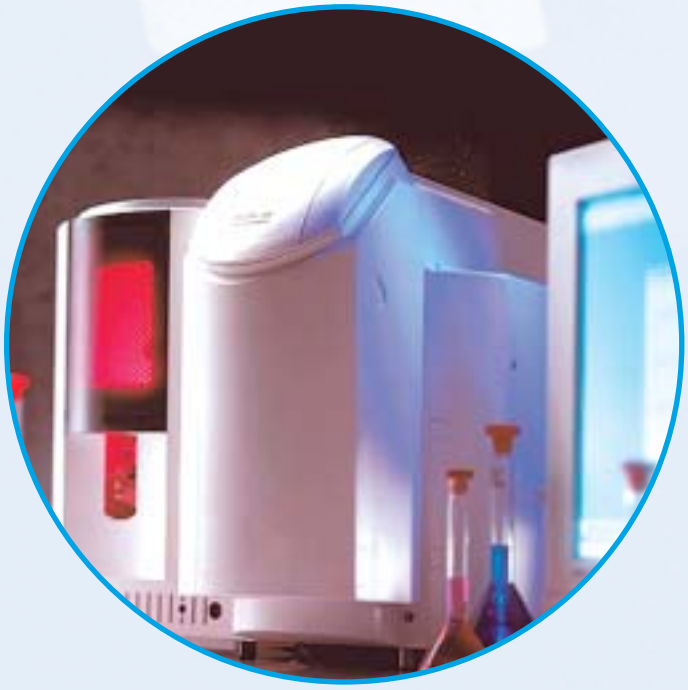
ATOMIC ABSORPTION SPECTROPHOTOMETRY

With an ever-increasing awareness of the significance of trace metals found in water supplies there is a continuing need to improve the various methods used for detecting their presence. Levels of chemicals such as Arsenic and Lead in drinking and waste-water are closely regulated by various national and regional environmental protection agencies. Generally, because the concentration of these metals to be found in samples is extremely low then a sensitive analytical method is required to detect them.

One such technique is Atomic Absorption Spectrophotometry (AAS), a widely used analytical technique for determining the concentrations of metallic elements in solution. This method is not only precise and accurate but also very sensitive, making it a standard technique in most professional environmental monitoring agencies.

- Compact fully-automatic atomic absorption system, with full multi-element capability.
- Controlled with either a stand-alone (Local Control) module or a PC running specialised Windows based software.
- Rugged construction allows for continual use.
- Features include Titanium burners, 6-position data-coded, auto-aligning lamp carousel, fully automatic gas control system and automatic background correction.
- Supplied with fully sealed Stockdale Doublebeam Optics to give maximum signal-to noise ratio during signal measurement.
- All mirrors are silica coated for improved performance.
- Self-calibrating Ebert Monochromator provides automatic wavelength and band-pass set-up.

ATOMIC ABSORPTION SPECTROPHOTOMETRY



Specifications

Light Source	Single or multi-element hollow cathode lamps Un-coded and Data Coded hollow cathode lamps
Wavelength Range	180 to 900nm with wide-range photo-multiplier
Optics	Stockdale Double beam configuration Ebert mono-chromator with nominal 0.2, 0.5 and 1.0nm spectral bandwidths. Half height slits available for use with graphite furnace.
Absorbance Range	-0.150A to 3.000A
Background Signals	2A corrected to>2%. Total signal up to 3A
Dimensions	567(W) X 510(H) X 589(D) (mm)
Weight	33Kg

A wide range of single or multi-element, un-coded or data-coded, hollow cathode lamps are available for use with this instrument. Please specify at time of enquiry / ordering the application the instrument is to be used for and a selection of lamps will be recommended.

Ask us to quote for installation, commissioning and training.

Purchase details

Atomic Absorption Spectrometer:
Fully complete and supplied with 6-lamp, Auto Gas System Atomic Absorption Spectrometer with standard multiplier, 100-240V (±10%) at 50 or 60 Hz.

Wag-WE80000

Accessories:

Graphite Furnace & Auto-sampler for use with AAS. Allows analysis of refractory elements and most metals to ppb levels. Comprised of a power supply unit and a furnace head which is controlled via the AA data station. Provides automatic sample and standard presentation and preparation for graphite furnace analysis. 200V, 220V, 240V, at 50/60 Hz.
30A 1-phase supply.

Wag-WE80010

Continuous Flow Vapour System for use with AAs. Allows analysis of the hydride forming elements, arsenic, selenium, mercury to ppb levels.

Wag-WE80014

Electrically heated Atomisation Cell. must be used with Continuous Flow Vapour System for flameless vapour generation AAS. Suitable for all hydride-forming elements.

Wag-WE80016

Air Compressor, 230V, 50Hz: Wag-WE80018

Acetylene Regulator: Wag-WE80020

Nitrous Oxide Regulator: Wag-WE80022

Nitrogen/Air/Argon Regulator: Wag-WE80024

PC System – for data acquisition and control of the AAS via the software.

Wag-WE80026

HPLC

high performance liquid chromatography

Another useful technique commonly used by the environmental chemist is High Performance Liquid Chromatography (HPLC).

The new generation of pesticides, (e.g. N-methylcarbamates – one of the most widely used class of insecticides) which have been designed and chemically engineered for reduced environmental persistence, have driven the increased use of Liquid Chromatography based solutions.

Recent concerns over the appearance of residues of these compounds in food and water have prompted increased awareness and testing. Since the carbamates are polar in nature and thermally labile, analysis by the more traditional gas chromatographic methods used for most pesticide residues is difficult.

Because of this, HPLC analysis techniques have become the method of choice for compounds such as this.

- HPLC system and modules which offer top grade performance at an economical price.
- Pumps, UV detectors and system control modules may be stacked vertically for the smallest possible space requirement or in lower profile where space permits.
- Rugged construction allows for continual use.
- State of the art design is combined with up to the minute software, operating in the latest versions of MS-Windows, offering the easiest possible use with full system control and data processing.
- The major requirements for the majority of HPLC systems are a solvent delivery pump free from pulsation effects, a sensitive, stable UV-visible detector and powerful but easy to use control and data processing software.

HPLC

high performance liquid chromatography

Ask us to quote for installation, commissioning and training.

The System comprises:

- Two dual piston fully compensated solvent delivery pumps with stepping motor drive and microprocessor control system pumps, with flow rates from 0.001 to 10mL/min and a maximum operating pressure of 40Mpa.
- Stainless steel binary dynamic mixer.
- Dual wavelength UV-visible detector with an 8µL x 10mm flow-cell, covers the wavelength range 190-700nm with exceptionally low noise, $\pm 0.5 \times 10^{-5}$ A, peak to peak, and incredibly low drift of $\pm 2 \times 10^{-5}$ A/hour, both measured at 240nm. High speed scanning at up to 400nm/s is possible and full programming using up to 6 wavelengths is standard. A column-mounting panel fitted to the detector carries the columns and the Rheodyne injector valve, which is complete with a 20µL loop. A cover for the column is provided.
- System manager software and Interface module. Provides full system control and data processing using the latest versions of MS-Windows.
- HPLC Column, Nucleosil 100, 5µm, C18 (NB: A wide range of columns are available to suit every application, the column listed is suitable for general pesticide analyses. Contact our technical department for more information).
- The system is supplied complete with solvent and pipe organiser and installation kit.

Purchase details

Analytical Binary gradient HPLC System 4: Wag-WE80200

Accessories

PC System – for data acquisition and control of the HPLC via the software and interface module: Wag-WE80210

Column Oven, heated and chilled: Wag-WE80220

Once again the final configuration for the HPLC system is dependent upon the type of analysis to be undertaken and we would be pleased to provide expert technical advice to ensure the end-user has exactly the system they require in order to meet their analytical requirements.

Tel: +44 (1635) 872929
Fax: +44 (1635) 862898/872808

wagtech INTERNATIONAL

email: export@wagtech.co.uk
Web: www.wagtech.co.uk

GAS CHROMATOGRAPHY

- GC column oven provides superior performance in oven heating, cooling and stability. Temperature range, near ambient to 450°C.
- Full digital pressure or flow control is provided for all carrier and detector gases.
- Range of leading-edge injectors with patented design features includes split/splitless, cold on-column, PTV and packed injectors.
- Comprehensive range of optimised high-sensitivity detectors includes thermal conductivity, flame ionisation, electron capture etc.
- Instrument control is exceptionally easy, using the industry-standard user interface, with additional dedicated keys to speed method set-up.
- The optional flexible, 90-position auto-sampler ensures optimum productivity and accuracy of results. Headspace auto sampler option available also.
- GC comes with fast, powerful PC software for user-friendly GC control and data handling.

Ask us to quote for installation, commissioning and training.

Gas Chromatography (GC) with its inherent high sensitivity and high separating power, is one of the more commonly used techniques in the analysis of environmental samples. There are two main types of compound that are commonly detected in Environmental Gas Chromatography analysis:

Volatile Organic Compounds (VOC)

Examples of VOCs are industrial solvents such as carbon tetrachloride, trichloroethene (TCE), trichloroethane (TCA), benzene and toluene.

Pesticides

Consist of a large group of chemicals that are used in agriculture to control plant and insect infestation. Common classes of pesticides include organo-phosphates, chlorinated hydrocarbons and carbamates.

There are a number of options available for the GC system configuration, dependent upon the actual application. A typical GC system for the analysis of pesticides and volatile organic compounds would consist of the GC instrument with the addition of the following components.

Purchase details

Gas Chromatograph:
High performance instrument suitable for the analysis of environmental samples.
Wag-WE80100

Split/Splitless Injector (x2) – with dual heated zones.
Wag-WE80110

Flame Ionisation Detector (FID) – responds to most compounds containing carbon and is therefore ideal for detection of VOC's.
Wag-WE80112

Electron Capture Detector (ECD) – detector particularly suitable for PCB and pesticide analysis.
Wag-WE80114

Nitrogen Phosphorous Detector (NPD) – ideal for the detection of herbicides.
Wag-WE80116

Auto-sampler - allows automation of the analysis, recommended if there is a high sample throughput.
Wag-WE80118

GC Column, BPX50, capillary type, 30m, 0.25mm i.d. (NB: A wide range of columns are available to suit every application, the column listed is a suggestion suitable for general pesticide analyses. Contact Wagtech International for more information).
Wag-WE80120

PC System – for data acquisition and control of the GC via the software.
Wag-WE80122

UV-VIS SPECTROPHOTOMETRY

Ultraviolet/visible spectrophotometry is used to measure the absorption capabilities of certain compounds with reference to wavelengths of light on the ultraviolet and visible light ranges and therefore allow identification.

This type of analysis is commonly used in Environmental laboratories to detect and identify many anions and cations such as phosphates and nitrates.

These spectrophotometers have been specially designed to cover the complete requirements of water analysis spectrophotometry. Both visible range and UV/VIS range instruments are offered, each with or without an integral printer for convenient presentation of results.

- Versatility - the 4000 Series instruments offer the flexibility, power and performance required. Wavelength scanning, cell programming, batch sampling, wavelength programming, time course plotting and reaction Kinetics are all available.
- Performance -High stability, low stray light, low noise and high wavelength setting precision ensure that reliable and accurate measurements may be made to 3 absorbance units.
- Programmed Methods- All instruments are completely programmed for approximately 150 water analysis methods based on the proven range of Merck 'Spectroquant' test kits. - Users may in addition develop their own methods and calibrations to be stored in security protected memory for instant recall and use at any time.
- Speed of Operation - Choosing a test method complete with the appropriate sample path-length takes approx 15 seconds for selection and the instrument to be set up ready for the measurement. Quick change sample holders each accommodating more than one sample path-length further adds to convenience and speeds up operation.
- Informative graphic display – menu's, scans, curves and tabulated results are displayed on the large backlit LCD display. Display panning facility gives an effective 430mm screen width.

UV-VIS SPECTROPHOTOMETRY

Specifications

Optical System	Littrow monochromator using 1200L/mm holographic grating; coated optics, accommodates 100mm cells
Bandwidth	4mm, all versions
Wavelength Range	190-1000nm, 325-1000nm visible versions
Wavelength Accuracy	Within 1nm
Wavelength Reproducibility	>0.1nm
Straylight	Typically 0.01% at 220nm and 340nm - UV
Photometric Ranges	-0.3 to 3.0A, 0-200%T, 0-9999C
Photometric Noise	< ±0.0002A at 500nm
Photometric Accuracy	1% or 0.005A which ever is greater
Absorbance Zero Stability	> ±0.001A/Hr at 500nm
Self Test & Calibration	Automatic at switch on
Display	High resolution backlit LCD display with contrast control
Light Source	Tungsten-Halogen
Computer Interface	Bi-directional serial RS-232C & parallel ports
Power	110-250V, 50/60Hz, 170/120W
Dimensions	480(L) X 340(D) X 205(H) (mm)
Weight	Approx 19Kg

All of the following spectrophotometers are sold as complete systems. Spectrophotometer systems comprise Spectrophotometer, Dual Cell Holder Spare lamp(s), Spare fuses, 2 silica or glass cells, Dust cover, power cable and instruction manual.

Purchase details

Visible Spectrophotometer:
325-1000nm wavelength range.
Wag-WE80300

Visible Spectrophotometer:
325-1000nm wavelength range, with integral printer.
Wag-WE80320

UV/VIS Spectrophotometer:
190-1000nm wavelength range.
Wag-WE80340

UV/VIS Spectrophotometer:
190-1000nm wavelength range, with integral printer.
Wag-WE80360

training & guidelines

PUBLICATIONS...

The importance of both Training and Technical Support are increasingly being recognised and acknowledged as being instrumental towards the long-term success and sustainability of any project.

In addition to Installation & Commissioning of Laboratory Equipment we offer a range of bespoke training courses individually structured to suit the needs of the client.

In this section we have offered our basic, intermediate and advanced training courses – all of which have, in the past been provided to institutions like UNICEF and a variety of NGO's in many countries throughout the world.

So feel free to contact us for more information on any training issues you have in mind.

Of course we are always pleased to provide advice on equipment selection, or any technical queries that you may have – remember, if in doubt, just ask.

training, guidelines & publications...

Basic Water Monitoring Course

A basic water quality testing course with the emphasis on using portable field testing laboratories to monitor the microbiological, chemical and physical parameters of drinking water in remote and rural areas (based on WHO guidelines).

Details: A 3 day practical course inclusive of field visits, incorporating the following objectives:

To define the microbiological, chemical & physical parameters of drinking water quality and to demonstrate the operation & effect of suitable field testing kits to determine these essential parameters.

To provide technical training in the different techniques for analysis of thermotolerant (faecal) coliforms, total coliforms, faecal streptococci etc.

To examine methods for measuring other critical parameters such as pH, temperature, conductivity, turbidity, arsenic, chlorine residual, fluorides and many other chemical factors of local significance.

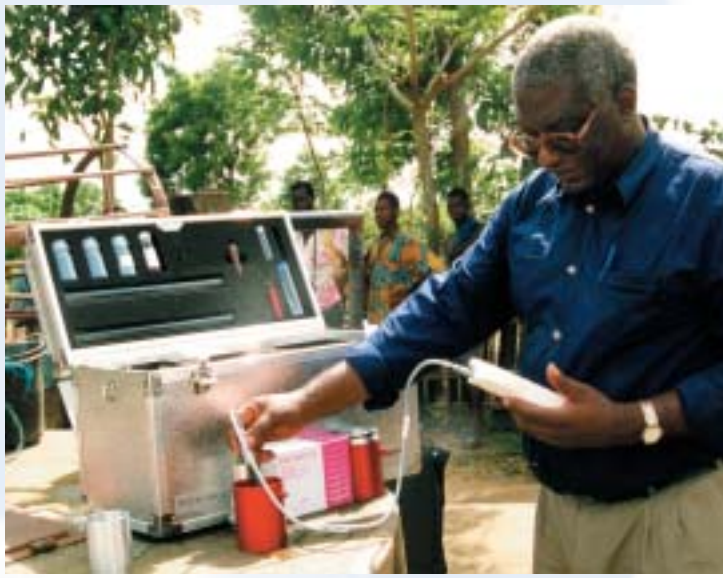
To provide practical instruction on field surveillance particularly in the areas of sampling, media preparation, testing procedures and membrane filtration.

To discuss the analysis of the data, interpretation of the results and provide constructive techniques for the recording of data from a variety of water sources over the long term.

To provide detailed instruction on the use of all components incorporated within the portable testing kit, including calibration, maintenance, trouble shooting and availability of spares and consumables.

Detailed Course Data Sheets available upon request

Wag-WE90000



Intermediate Water Quality Monitoring Course (Field & Laboratory based)

A combination of advanced rural water testing (including portable field testing instruments) combined with the use of laboratory based analytical testing techniques for measuring microbiological, physical and chemical parameters in drinking water and also to discuss quality control, quality assurance methods and their implications.

Details: A 5 day course which in addition to covering all the material contained in the basic course will also seek to offer the following objectives:

Introduction to advanced analytical techniques for a variety of microbiological analyses in addition to further chemical and physical parameters in drinking & waste water quality e.g. B.O.D., C.O.D., Heavy Metals etc..; laboratory on-site methods and their applications and selection of techniques including all related Health & Safety issues.

Basic training and maintenance on essential/available analytical laboratory based machines.

To demonstrate the need for monitoring water quality as part of water resource management and to show how monitoring data should be used to improve management of water resources.

An introduction to the use of computerised data management systems as a tool to improve information management in water supply surveillance.

Importance of Analytical Quality Assurance and quality control in the laboratory and in the field.

Detailed Course Data Sheets available upon request.

Wag-WE90100

training, guidelines & publications...

Advanced Water Quality Monitoring course
with an emphasis on Laboratory development

A 2 week course which in addition to covering the content of both the basic and intermediate courses will also provide comprehensive practical instruction and information on water quality monitoring for both field and laboratory based activities. Although a higher emphasis is placed on working within a fixed site laboratory environment, specific objectives are as follows:

To provide advanced analytical techniques for Microbiological, Physical and Chemical parameters of water quality analysis.

To provide further comprehensive training and maintenance techniques of analytical equipment. Such as; AAS, GC, HPLC etc.

To consider Human Resource development in Water Quality monitoring, particularly with regard to assessing staff training needs and capacities, identifying capital equipment needs and supply routes and looking at the overall Laboratory Design.

To describe the procedures for planning of national and regional monitoring programmes.

To look at information management and the use of computerised data management systems (L.I.M.S.) for decision making purposes and establishing priorities.

To examine Quality Control and Quality Assurance protocols within the laboratory and to implement basic Q.A. procedures with a view to obtaining a recognised International Accreditation.

Detailed Course Data Sheets are available upon request.

Wag-WE90200

Guidelines for Drinking Water Quality

The World Health Organisation (WHO) was set up in 1948 with the objective of promoting "The attainment by all peoples of the highest possible level of health. One of the main roles of the WHO is to establish international norms to protect human health. As part of its activities on Drinking Water and Health it has published at regular intervals "Guidelines for Drinking Water Quality."

Provision of 'Safe' drinking water refers to a water supply which is of a quality that does not represent a significant health risk. In a report by the United Nations in 1992, it was estimated that more than 80% of all disease and greater than a third of all deaths in developing countries was caused by the consumption of contaminated water. Therefore ensuring good quality drinking-water for everyone is an effective, health protective measure.

The guidelines are addressed to water and health regulators, policy makers and their advisors, mainly to assist them in the development of national standards. They are also used as a source of information on water quality and health. The guidelines are recognised by a number of organisations such as the UN, EC and the USEPA, as being the definitive scientific point of departure for drinking water quality issues.

The guidelines contain guideline values for a number of microbial and chemical aspects of drinking water quality that continue to feature in the headlines:

Arsenic continues to be a major public health issue in Bangladesh and has become increasingly recognised in countries as diverse as the USA and Vietnam.

The presence of naturally occurring fluoride in the groundwater of developing countries. Severely affects tens of millions of people with crippling effects.

Toxic Cyanobacteria in water.

Disaster relief workers while trying to restore supplies of safe drinking water, sometimes struggle with unclear guidance on the safety of emergency disinfectants.

A brief description of the guidelines on Drinking Water Quality is outlined below.

Guidelines for Drinking Water Quality – Volume 1
Contains the guideline values themselves together with an explanation of how they should be used, the criteria used in selecting the various contaminants considered, and a description of the approaches used to derive the guideline values.

Guidelines for Drinking Water Quality – Volume 2
Explains how guideline values for drinking-water contaminants are to be used, defines the criteria used to select the various chemical, physical, microbiological, and radiological contaminants included in the report, and describes the approaches used in deriving guideline values.

Guidelines for Drinking Water Quality – Volume 3
Describes the methods used in the surveillance of drinking-water quality in the light of the special problems of small-community supplies, particularly in developing countries, and outlines the strategies necessary to ensure that surveillance is effective. It is also concerned with the linkage between surveillance and remedial action and with the form that remedial action should take.

The text of most of the guidelines and information on their updating, along with CD-ROMs bringing together most of WHO's publications on water, sanitation and health are available from Wagtech International Limited. In addition to the WHO information we also have a comprehensive list of recommended publications relating to the field of water quality, please see next page for details.

Publications

1. WHO - Guidelines for Drinking Water Quality - Volume 1 Recommendations(1996 – 2nd Edition) Wag-WE90500

2. WHO – Guidelines for Drinking Water Quality – Volume 2 Health Criteria & Other Supporting Information(1996 – 2nd Edition) Wag-WE90510

3. WHO – Guidelines for Drinking Water Quality – Volume 3 Surveillance & Control of Community Supplies (1996 – 2nd Edition) Wag-WE90515

4. WHO – Operation & Maintenance of Urban Water Supply & Sanitation Systems – A Guide for Managers(1994) Wag-WE90520

5. WHO – Technology for Water Supply & Sanitation in Developing Countries(1987) Wag-WE90525

6. WHO – Guidelines for the Safe Use of Wastewater & Excreta in Agriculture & Aquiculture(1989) Wag-WE90530

7. Sarah House & Bob Reed – Emergency Water Sources – Guidelines for Selection & Treatment(2000) Wag-WE90535

8. APHA – AWWA – WPCF – Standard Methods for the Examination of Water and Wastewater (1985 16th Edition) Wag-WE90540

9. DFID – Guidance Manual on Water Supply & Sanitation Programs (1999) Wag-WE90545

10. Guy Howard – Water Quality Surveillance – A Practical Guide (2002) Wag-WE90550

11. Guy Howard – Water Supply Surveillance – A Reference Manual, (2002)Wag-WE90555

12. John Pickford – The Worth of Water – Technical Briefs on Health Water & Sanitation(1991)Wag-WE90560

13. Deborah Chapman (Published on behalf of UNESCO, WHO and UNEP) Water Quality Assessments – A guide to the use of Biota, Sediments and water in environmental monitoring (1996 – 2nd Edition) Wag-WE90565

14. Jamie Bartram & Richard Ballance (Published on behalf of WHO and UNEP) - Water Quality Monitoring – A practical guide to the design and implementation of freshwater quality studies and monitoring programmes(1996 – 2nd Edition)Wag-WE90570

15. AWWA – Introduction to Water Quality Analyses – Principles and Practices of Water Supply Operations - Volume 4 (1982) Wag-WE90575

16. Cara Gleeson & Nick Gray – The Coliform Index and Waterborne Disease – Problems of Microbial Drinking Water Assessment (1997 – 1st Edition) Wag-WE90580

17. Neil.F.Durham & Professor Walter Kosmus – Analytical Considerations of Arsenic Contamination in water Wag-WE90585

Terms & Conditions

Payment

Payment for your order should be made prior to despatch of the goods unless otherwise agreed. Payment may be made in all major currencies, preferably sterling cheque (although U.S. Dollar and Euro payments are also accepted) bank draft (in favour of Wagtech International or by Letter of Credit confirmed by a UK Bank.

Customers with existing accounts may qualify for other payment terms.

Minimum Order Values:

Please note the following minimum order values:

All Payment terms other then Letter of Credit	£ 200
Letter of Credit	£ 2,000

Delivery

Subject to stock availability, orders are normally dispatched within 4-6 weeks from receipt of order.

Certain water test kits are classified as " Rapid Response" products and we have therefore undertaken to carry stocks of these products all year around in order to facilitate an immediate despatch in response to emergency situations.

Catalogue Entries

The greatest care is taken to ensure that the catalogue descriptions and illustrations are accurate. However, colours and product details may vary from those presented.

Jurisdiction

The proper law of all transactions between the parties is English Law and any disputes arising shall be determined by the courts in England.

Our full standard terms and conditions apply to all orders and contracts, a copy of which is available upon request.

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